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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

An Engineer Looks at Rural America
MORRIS LLEWELLYN COOKE

The T. V. A. Power Program
ROBERT W. HARBESON

Population and Building Construction
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The Holding Company Act of 1935
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Western Land Policies and Ownership Trends
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The Financial Survey of Urban Housing
DAVID L. WICKENS

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NUMBER 1

An Engineer Looks at Rural America

By MORRIS LLEWELLYN COOKE*

AN engineer is popularly supposed to concern himself only with such things as blue prints, transits, waterwheels and automobile production lines. Forty years of experience in handling engineering problems have convinced me that, unless an engineer schools himself to look far beyond these mechanical trappings of his profession and to understand contemporary trends, he cannot cover his field.

So, in discussing the subject, "An Engineer Looks at Rural America," I hope to avoid the technical detail of the engineering profession and to sketch for you in broad outline those things which most impress me as I look with an engineer's eye over the broad expanse of rural America. I am interested in the land and its resources, in the people on the land, and in the people's relation to the land—their way of treating it, their way of doing things, and above all, their way of life.

In recent decades our nation has been going urban-minded at an increasingly rapid rate. To this change in the mode of American thought perhaps as much as to any other cause can be attributed those downward trends in rural life which have been reflected in our agricultural indices.

The balance between the claims of town and country through which we have become a united and powerful people has been upset. We do not have to hold with Spengler that city-dwellers as a rule are contemptuous of country men. But we can say truthfully that our urban populations have become all but unconscious of the vital part which agriculture inevitably plays in a virile civilization. They are unaware that an increasingly disproportionate share of the national income goes to the urban-industrial establishment as contrasted with that which goes to the rural-agricultural population. Under pioneering conditions great leadership came from those on the land, and from

* Administrator, Rural Electrification Administration.

Editorial Note: The material in this article was originally presented as a lecture in the series in Contemporary Thought, conducted by Professor Baker Brownell, at Northwestern University.

professional groups in small cities and villages which were close to those on the land and understood the latter's problems. It was at this font that the American spirit was nurtured. But, gradually, for this leadership, there has been substituted that of the great cities and centers of finance. Important offsetting steps taken in the last three years call attention to a situation that has become grave in the eyes of all thoughtful observers.

There have been times when within the same nation urban and rural life were measurably independent and when the objectives of each could be pursued almost without regard to the other. But with the rise of a mechanized and high-powered industry, increase in populations, far-flung systems of international trade and credit, and vastly superior means of transportation and communication, the web of national life is more closely woven and there is a growing recognition of the interdependence of agriculture and industry, of town and country.

Soil Depletion—A National Peril

Hence there is in the depletion of our soils a truly national peril, and the question arises as to whether our nation can long survive despite this depletion. This question completely overshadows the frequently discussed wage comparisons between farm and industrial workers and contrasts between the typical cultures of town and country. Soil depletion presents a situation in which everyone—high and low, rich and poor—must be interested because our existence as a people is involved. Our children's children will know standards of living far below ours, and feel the pinch of widespread scarcity, unless we can learn to safeguard our agricultural lands against the ravages of wind and water.

Our immigrant forefathers beheld a continent of abundance. Before their hopeful eyes America lay rich in land, minerals, and water; in timber, game, fish, and fur. These eager colonists entered into this land at a rate unequaled in human history. From the European reservoirs of population, millions of vigorous people were supplied to fell the forests and break the sod. Once a colonial foothold was gained on the eastern shore, the westward advance was rapid. To the farmer and stockman, the lumberman and miner, an inexhaustible wealth of natural resources stretched to the horizon. To these sturdy folk, such natural wealth was not only free, but its very abundance was taken for granted. The march westward was the victorious occupation of a triumphant invader.

However, from the vantage point of hindsight, that victorious occupation became ruthless exploitation and the abundance is becoming relative scarcity. The furs, fish, and game have disappeared from large areas; only fragments remain of the great pine and hardwood forests of the eastern and central states, and we are rapidly draining the reserves of the West. Over 75% of our saw timber and over 50% of many of our minerals, including oil, copper, zinc, and lead, are gone. Of even graver import, the very land itself is rapidly going! It is being washed into the rivers and oceans and being blown away, forever out of reach and out of use.

When the pioneers came, by far the larger area of this country's broad expanses was completely covered by vegetation varying from short grasses to dense forests. Beneath this protective coverage of vegetation lay the nourishing soils, the product of intricate processes of soil formation during many thousands of years. Over large areas

dependable water reserves were to be found on and at convenient levels below the surface.

We, as a people, cleared off nature's protective cover and exposed the rich soils to winds and rains. We plowed up the hillsides and destructively cut off and burned off our woodlands. We drained off surface waters and by pumping have wasted even the deep-level supplies. We overgrazed, on hill and prairie; we broke the balance which nature has set up for the control of erosion.

So today we may well ask, "Is the United States a permanent country?" This question, when first raised, was considered fantastic. Recent measurements indicate that it is far from fantastic; it is too real. The United States of America is not a permanent country in the sense that England, Ireland, and some of the North European countries are permanent. England, for instance, has the combination of a sod agriculture and generally regular and gentle precipitation of moisture. Whereas, in our corn and cotton belts, we have a ploughed agriculture with the soil being constantly cultivated and thus kept exposed to the devastating effects of our heavy, torrential downpours and our periodic droughts.

The destruction of the soil has sounded the death-knell of nations in the past. Aerial photographs of Asia Minor, China, North Africa, and Peru reveal strikingly similar regions of scarce vegetation, gullied hillsides, rocky valleys, and ruins half buried in dust and debris. Archaeologists, in their post mortems of these dead lands, tell us that these once prosperous regions were reduced to poverty as a result of the destructive exploitation of the once cultivated fertile soils.

The principal difference between the destructive handiwork of the ancients and ourselves is the increased dispatch with which we exploit. Soil erosion specialists tell us that 100 million once fertile acres of farm land—equal to Illinois, Ohio, Maryland and North Carolina combined—have been essentially destroyed for profitable farming; that another 125 million acres are seriously impaired; and that another 100 million acres are threatened—all belonging to the best farm lands of the United States. Water and wind erosions generally each year dispose of, in so far as use is concerned, 3 billion tons of soil.

One outstanding influence toward this profligate waste of irreplaceable national resources is the American passion for speculation, especially speculation in land carrying with it a sales psychology rather than a use-and-conservation psychology. Farm values, until the past few years, have been the resultant of two distinct factors: (1) their value in supporting human life; and (2) usually far the more important, the probability of a rise in market or sales value. As a management engineer, it has been my experience that the value of a manufacturing plant is almost always gauged by its effectiveness in turning out the particular product it was built to manufacture, hardly ever by the salability of the plant itself. The efficient manufacturer reduces the cost of his product by keeping his plant and equipment in good repair. Too many farmers permit their one real asset—the land—to waste away and make little or no effort to conserve or rebuild it. This American attitude toward agricultural land is a far cry from that of a certain tribe in the Philippine Islands who for over 1,000 years, against heavy odds, have kept their hillside acres fertile by terracing and other appropriate devices.

On another occasion, in an effort to be as precise as one can be in such a matter, I said,

"As matters now stand and with continuance of the manner in which the soil, the mainstay of individual and collective life, is now being squandered, *this country of ours has left to it less than one hundred years of virile national existence.* And if that represents a reasonably accurate statement, it is vastly more significant—if we are to win out against the accelerated progression of this gangrenous growth of soil erosion—that we have probably less than twenty years in which to build up the techniques, to recruit the fighting personnel and—most difficult of all—to change the attitudes of millions of people who hold that ownership of land carries with it the right to mistreat, and even to destroy their land, regardless of the effect on the total national estate. For be it remembered that just as with certain bodily ills—such as tuberculosis and cancer which are only curable in their early stages—so it is with ills to soils built up through hundreds of years. Once ravished beyond a certain point, they are incapable of restoration until after the passage of centuries. At the present rate of destruction only 150 million acres of really fertile land will remain in this country in fifty years. This is the only acreage sufficiently level to resist erosion without some control work."[1]

In so destroying the usefulness of millions of acres, we are destroying the basic capital asset of society. In the rapid occupation of the land, the settlers and their descendants gave almost no thought to the conservation of the very resources which had attracted them. Their first yardstick was expediency. Through countless centuries nature had built up a balanced, fruitful relationship among waters, soils, animals, and vegetation. Mutually dependent, each worked through physical, chemical, and biological processes to create and maintain a continent of abundant and useful resources. In less than one century we have heedlessly wrecked nature's balance.

A new national policy must now be formulated with the objective of conserving, controlling, and utilizing the soil and water now rushing destructively off the land. We must start with the raindrop, the headwater streams, and other "little waters." Engineers in the last 50 years have been intrigued by the problems presented by building enormous dams across great rivers but have neglected the problem of controlling the little streams and small watersheds whose aggregate uncontrolled run-off has caused disasters along great rivers closer to the sea. Erosion can be checked by restoring vegetative cover to the steeper and poorer lands, and by new techniques of cultivation and cropping the more fertile lands. Man must attempt to enter into a harmonious relationship with nature, for his treatment of the earth largely determines the duration of his particular civilization.

Effective Organization of Farmers Imperative

Because of our exhausted soil, timber, or mineral resources, we are confronted with rural problem areas in which stranded populations barely subsist. Most of these stranded groups are found in areas where man has plundered the natural resources without giving thought to the future. We must learn to protect our land from ourselves or we will never succeed in establishing a permanent civilization.

When as a people we come to understand the urgency of widespread agricultural betterment, including soil erosion control, and decide to take all necessary and possible steps to promote improvement, we will find that we need

[1] "On Water Planning for the Nation", a paper before the American Water Works Association, May 7, 1935.

two favorable conditions: (1) the effective organization of the farmers; and (2) adequate rural education. Without effective organization, the rural population cannot cope with these problems and hold its own in our complex society with its many highly organized groups. Adequate education is necessary to make the operations of rural organizations effective in intelligently dealing with other groups and in forwarding the farmers' interests.

The efforts of the farmers as individuals will by themselves no longer suffice. It was suitable in the day of frontier life, when family units lived and worked at a distance from each other, and the problem of each was primarily to establish a foothold in a new land and wrest a living from nature. Today the situation is changed by new modes of transportation and communication, the division of labor involving intense specialization, and the world-wide commercialization of agriculture. Cooperative effort is essential if farmers are to succeed under the new conditions.

The management engineer and forward-looking industrial executives have contributed to industry techniques of organization that have solved many of its problems brought about by the new and complicated economic set-up. Agriculture must rely upon intelligent broad-gauged leadership of cooperative groups to maintain or improve its position.

The farmer is learning the benefits of economic organization and the forms of rural group organization are beginning to take shape. The farmer's own professional organizations, such as the Grange, the Farm Bureau Federation, and the Farmers' Union are developing from the older purely fraternal or political phases into a highly dynamic, economic phase known as the cooperative. The farmer is learning to buy through cooperatives and to sell through cooperatives. Their effectiveness in increasing his economic well-being is giving him new confidence in cooperative effort.

Within recent years, however, the agricultural cooperative has become in some sections almost the pattern of rural commerce. One of the governmental agencies has compiled, with exemplary care, a list of agricultural cooperatives which, last summer, ran up to 10,000 names. The Rural Electrification Administration was permitted to prepare a notice to be sent to its mailing list, and when we got the copy to the addressograph, we were 1,000 envelopes short. There had been an increase of 1,000 recorded cooperatives in less than six months!

This rapid growth is the result of successful rural cooperatives in a few of our states. Word of this success has spread locally and thousands of farmers in nearby counties are forming new cooperatives. The local character of the cooperative movement is evidenced by the fact that 70% of the agricultural cooperatives in this country are found in only 10 states. The leading example is Minnesota which reports 5,000 cooperatives. Cooperatives have proven so helpful in so many different fields of endeavor that in some rural sections the farmer belongs to three or four different cooperatives. The habit of cooperation having been formed, and the value demonstrated in one instance, the farmer goes on and devises a new cooperative for each new line of business in which he is interested.

These rapidly multiplying cooperatives are numerically mainly marketing organizations, but consumers' cooperatives—selling, usually, oil, tires, fertilizers, seeds, and feeds—are becoming more numerous and developing sometimes large-scale general businesses. One

such cooperative near Washington, with 1,600 members, last year sold, to members only, $750,000 worth of merchandise, and this year expects to do a million dollar business. It sells everything a farmer is likely to need, including groceries, household furnishings and clothing, and farm equipment.

Small retail cooperatives branch from one store into chains of dozens of retail outlets, and occasional wholesale groups. It is clear that the farmer is learning the value and technique of organization.

The government has helped to strengthen the farmer by encouraging his cooperative organizations. Many of the new cooperatives have secured their initial capital from the Farm Credit Administration. Most of the electric service cooperatives will build their rural line extensions with money borrowed from the Rural Electrification Administration.

Guidance in organization has often come from the county agricultural agent. These men, distributed throughout the country, bring to the farmers the best fruits of the agricultural schools and experimental farms and often lead in the social and economic life of the community. They have administered much of the Triple A program, they encourage the formation of cooperatives, and they help the farmer to benefit from each new development of governmental farm policy.

Supplementing their work is that of the home demonstration agents, who work in an ever broader field with the women. The whole gamut of country life—cultural as well as economic, human as well as technical—engages their attention. In many ways the work of the men and women agents is rounded out by the vocational teachers, leaders of 4H clubs, and similar groups.

During the present Administration, government cooperation with the farmer has exceeded any previous effort. The rural relief problem, dealt with first by the Federal Emergency Relief Administration, changed rapidly to a self-help basis, with organization of the Rural Rehabilitation Corporations. These were later taken over by the Resettlement Administration, which grew out of a double realization: (1) that permanent rural rehabilitation was often impossible in blighted rural communities, and that whole populations needed to be transplanted from submarginal to more fertile acres; and (2) that the fertility of many sections had to be restored, and the fertility of still others preserved.

This effort and the production control program of the Agricultural Adjustment Administration for the first time focussed attention upon the basic problems of agriculture—the fitness of its people, the fitness of its soil, the wisdom of its production and marketing program—and for the first time resulted in national action in dealing with them. The county organization and the local point of view are not adequate to deal with such problems. No county could be expected to retire submarginal acres or remove a stranded population for the benefit of agriculture as a whole.

It is at this point that the farmers' own organizations begin to show the need of stimulus and growth of interests and activities. The leaders of the cooperatives are in danger of losing themselves in the minute details of a commercial business and of failing to educate their fellow members in the more fundamental problem of preventing soil depletion. Yet from a long-range business point of view, the prevention of soil depletion is far more important than the exact method of disposing of this year's harvest. Plans for checking

soil erosion, the crop control measures of the Triple A, the foreign trade agreements affecting agricultural products, and the legislation under consideration for decreasing farm tenantry are all of vital interest to the farmer. The farmer must depend upon an intelligent and informed leadership to advise him as to how his interests are affected by these current measures and to counsel his farming community how it may benefit by them. Without widespread leadership of this type, but little of permanent benefit to rural life will result from the amazing growth of farm organizations that is taking place.

Adequate Rural Education Is Needed

This indicates a pressing need for educational programs that will stress the value and obligations of cooperative effort. The first aim of such a program will be, of course, the inculcation of a new point of view among the farmers as a group. Secretary Wallace has expressed this aim in a paper in which he defined "social discipline" as it affects the farmer. He said:

"I mean by that term, a willingness to modify individual behavior for the larger purposes of society. It is really enlightened selfishness, for in any enduring civilization the welfare of the individual is, in the long run, identical with the welfare of the group. Without the emergence of a very real social discipline, I do not see how we can continue to face unpleasant facts and distasteful alternatives, and consciously undertake a course which we know will be difficult."

Such an educational effort must teach cooperation as a way of life. Originating in the main with farsighted leaders of farm organizations, it must be pressed forward largely by their own organizations. Our farming population can expect very little from other groups. Under today's conditions each segment of society is almost necessarily engrossed with its own interests.

Among other benefits to the rural community of cooperative effort have been those of crop control resulting from an analysis of our production capacity and our consumption prospects. While engineering exactitude in this analysis is not possible, it is obvious that crop control made possible by cooperative effort has very largely benefited our rural areas. Lack of cooperative effort results in a purely competitive situation where the individual farmer is at the mercy of the market. Production control in agriculture is necessary to keep our farm economy from falling back into the chaos of 1932.

Two kinds of education are needed and both should be broad-gauged. There is as always need for education in farm management; but there is an even greater need for education in cooperative living. In earlier days when our population, especially urban population, was increasing rapidly, and when Europe offered a ready market for farm surpluses, indifferent farm management yielded returns. In many instances, the net return came from exploitation of the fertility of the land, which, as we have seen, constituted a waste of natural assets; or from increase of capital value caused by progressive density of settlement and the development of a more varied economy, which constituted benefit derived from social evolution rather than earned income. Those days are past. The owner of a farm today must earn his income by intelligent management in an intelligently organized environment, and at the same time he must not permit the assets embodied in fertile soils and a water supply to diminish. The system of rural education on its technical side must therefore be brought to a high state of perfection, and must reach not only the youth but also the adults of our rural population. This is

only a counterpart of the improvement in education recognized as necessary in urban centers.

Some notable achievements have been made in rural education along farm management lines during the past 15 years. Agricultural colleges have become stronger. The Smith-Hughes Act of 1917 has been of great value to rural secondary education. Approximately ⅓ of the rural schools are covered by this Act. In the agricultural branches of high schools there are now some 5,500 teachers, 180, 000 regular pupils, and 23,000 taking advanced work. Evening work in these schools reached 100,000 adults. That there should have been so much progress in less than 20 years is gratifying. But it is not sufficient. All rural schools should enjoy the benefit of the Smith-Hughes Act. All the youth of the farming areas should receive a complete secondary education. As many adults as possible, in the country as well as in the villages and cities, should have the privilege of continuing adult education. The rapidity of social change makes this everywhere necessary. We have hardly begun to offer the facilities of adult education to our people.

Not all education is acquired in the class room. Rural educational forces include the Juvenile Grange, a similar subsidiary of the Farmers' Union, the more recent Future Farmers of America, an outstanding organization of boys studying agriculture in rural schools with 4,000 chapters and 100,000 members, and the more technical group of 4H clubs, to which reference has already been made. One should mention also the demonstration activities of Extension Service in cooperation with the various farmers' organizations. The necessary elements of a great integrated system of rural education that would reach all classes is offered in these various agencies.

But rural education must cover not only the techniques of farm practices and farm business, but also the technique, if we may use that term, of social organization and cooperative living.

You may think it surprising that an engineer stresses so sharply the importance of a broad education. Perhaps this may be attributed to my being so aware of the handicap that the lack of a liberal education has imposed on many members of the engineering profession.

In one respect the group that lives on the land has a more solid foundation for the thinking and the planning that are required in the United States than do the groups that live in commercial and industrial centers. As suggested by Dr. O. E. Baker, economist of the Division of Land Economics of the United States Department of Agriculture, the farmer is concerned with nature. The organization and processes of nature are organic, and therefore the farmer has a background which should help him to understand the growth and change that occur in the world about him and something of the interrelation of its many parts. Of course, the lack of cooperative experience of the farmer has held this basic outlook in check and limited it to the matters of experience in ordinary farm practice. But if it exists in embryo, and can be expanded by adequate social and economic education, the consequences would be significant. We should then have more intelligent leadership, and what is of equal importance, more intelligent fellowship.

People in all parts of the United States must learn to think more with the welfare of the whole nation in mind. Only in a frontier society is life so simple that a people can without too great

error think, have policies, and do things as though the whole were but the sum of a large number of unrelated parts. In our early days there were fundamental unifying forces—racial, and those pertaining to the physical basis of life—which prevented too costly errors. But in the society which has now developed in the United States unifying thought is necessary. Forces are so interrelated, so immediate in their responses and so far-reaching in their effects, that none of them can be safely disregarded in the making and execution of our policies.

Given an education comprehensive and accurate in its knowledge of the details of these relationships, and broad in its perspective, the rural United States can then develop its quota of leaders who appreciate the great gains to be derived from collective effort; leaders who see clearly the function of agriculture, can define its objectives, and make the plans for their achievement; leaders who perceive and understand the relations and interdependencies among commerce, industry, and agriculture, help define the objectives of our total economy, and are capable of making plans and executing them effectively.

There is another aspect to this matter of education. If we are to arrest the decline of American agriculture, the leadership will, of course, best be provided by experts of many different persuasions. But in this period of intense specialization, our experts cover such a narrow field that except in rare instances we cannot depend on them as social consultants. A broad approach is needed. A reviewer in the *New Republic* recently remarked that the scientists of the Victorian period felt an obligation to interpret science in terms of its social implications. So wrote Tyndall and Huxley and a host of others. Lord Kelvin felt that even an attenuated discovery in physics was only half done if both the discovery itself and its significance in the whole scheme of things could not be explained to the man on the street. But the typical expert of today screens both his status and his satisfactions from all but men in his own limited field. He especially abhors the political arena. To a narrow accuracy rather than imagination, to close thinking of a limited sort rather than to the sometimes treacherous grounds of broad generalizations go the rewards. So the savants lead cloistered lives in their laboratories and studies while Theodore Roosevelt pleads the cause of reforestation and Franklin Roosevelt sounds the tocsin of soil erosion control.

Many will be the influences leading to a more rational education for our rural population. No man is eloquent enough to persuade a whole nation to pour its thought into new molds. The prophet always awaits the occasion. New wisdom is merely the recognition of new situations. In the field of political and social thought, significant changes in the point of view of the whole people always follow some wide-spread material or technical change, seldom apparently related.

We have already mentioned the recent tendency of the farmer to develop a cooperative attitude—at least in matters of business. My supposition is that the automobile is largely responsible for this new attitude, this growing lack of faith in the sufficiency of isolation. The automobile not only provided rapid transportation in itself, but it brought the good roads movement, the union school, the rural community center, the quick touch with town, the easy run to the market. It not only enabled farmers to get together easily, but greatly enlarged any given market area. It became possible not only to compare

ideas in group meetings, but to get the economic advantage of large-scale operations.

The Contribution of Rural Electrification

The contribution of the automobile to rural thinking, however, has probably now reached its peak. We must look to new instrumentalities to enlarge further the scope of social thinking. No one can predict, of course, what these instrumentalities may be, but I feel justified in believing that rural electrification will be among them.

Ten per cent of our farms have electricity already. But this is hardly an evidence of electric power's having become a common social influence in rural life. Sixty per cent of the farmers now own automobiles; nearly all farmers have access to hard roads as the result. The automobile is recognized as a necessity, and its development has been aided by the road facilities provided for all by the community.

Rural electrification is not yet a community matter, though the cooperative promises to make it so. Extensions of rural lines are still made on the basis of individual bargaining, with each individual farmer seeking service separately from a private utility. But when a community demands and receives service as a whole, a new situation develops. Repeated on a nation-wide scale, this may in itself affect the social organism. It will at least extend the cooperative into a field that often transcends county lines, linking the rural consumer up with the municipal plant, with giant hydro-electric plants, and with far flung power grids. The rural community will thus become conscious of the legislative and regulatory situations affecting the power question.

If, as a result, not 10 but 60% of the farmers get electricity, the social effects of the uses of electricity on the farm and in the home will almost certainly begin to be felt to a measurable degree. Rural electrification may, therefore, affect the social attitudes of farmers as a group, and produce marked economic and cultural effects upon the farmer as an individual. Who can predict what broadening of thought may be the result?

There appear to be three levels of interest in rural electrification. Anyone who knows of the long hours and the drudgery which go with rural life, especially for women, must be interested in the labor-saving aspects of electricity in house and barn—in washing and milking machines, in vacuum cleaners and pumps which do away with never ending carrying of water. There are a very large number of electrical devices which certainly ease the burden and add to the comfort of life on the farm. The provision of these must be the first concern of the Rural Electrification Administration.

But electrification, cheap and widely distributed through rural areas, may easily mean more than this. It may bring about a cultural renaissance for agriculture. It is not widely known that electricity was first used in industry for energizing the travelling crane. I served my apprenticeship in a shop so equipped. Since that small beginning about 40 years ago electricity has transformed industry. Heavy lifting has disappeared and drudgery has been largely eliminated from many industries. In fact, we have one industry—that of generating electric current, whether by steam or water power—where human labor has been completely eliminated. All operations are controlled by pushing buttons. But electricity has done vastly more than this in making possible the age of industrial plenty. It is probably the force above all others which has so

unsettled our world economy as to demand constant and far-flung social readjustments. No one is wise enough to see just how electricity is to work a transformation in rural life, but there are ample indications of its power to change agriculture mightily.

Thus far I have discussed some of the basic problems of rural life that can be solved only through cooperative effort and intelligent leadership. We have seen that the greatest of these problems is that of soil erosion. So my third level of interest in rural electrification is based on the fact that cheap and widely distributed electricity may be expected to play a master role in the salvation of our soils. If and when public attention has been directed to the necessity for controlling and utilizing our headwater streams and other little waters as means to soil conservation, not only will the development of small water powers come once again into vogue, but to make the conservation of water economically feasible electricity for pumping will be required wherever water storage is available.

To meet with any prospect of success, the challenge of this earth disease to which I have sought to direct your attention will require not only money expenditures far beyond anything we have heretofore known, but a fortitude comparable to that of those ancestors of ours who crossed uncharted seas and surmounted incalculable difficulties to lay the foundations for a social order the best the world has known. In this process we will learn anew that difficult paths are not always the wrong ones. If we as a people seek a moral equivalent for war, we may find it in a united effort to put our agricultural house in order.

Population and Building Construction: A Revision

By FRANK J. HALLAUER*

I. Original Findings

AN analysis, made by the writer, of the relation between population increase and volume of residential construction from 1920 to 1930 was published in the February, 1934 issue of this *Journal*.[1] The analysis used the accompanying chart to arrive at tentative estimates of probable building volume for the present decade, as follows, based on an anticipated increase in population of 10 million:

1. On the assumption that the increase would be all urban, as it was from 1920 to 1930, and that other factors would remain the same, there were prospects for 5,200,000 new family units during the decade (520,000 annual average).

2. It was observed that conditions were not to be all the same. Because of a surplus of dwellings in 1930 compared with a shortage of 1¼ million units in 1920, a correction by that amount reduced the prospective volume for the decade to 4 million units (400,000 annually).

3. Furthermore, of the 4,000,000 units, 1,360,000 were dependent upon a continuation of the downward trend in persons per unit, which might not develop under unfavorable economic conditions. Thus the actual prospect would seem to have been something less than 400,000 annually compared with over 700,000 annually during the previous decade.

4. The depression was an uncertain factor. It might bring about a city-to-farm movement, thereby reducing the expected urban population increase and residential construction.

5. Because population was approaching stabilization, it was concluded that population increase would be a minor factor in volume of residential construction by 1950. After that, volume of residential construction would depend largely upon replacements on which there is little available information. Replacement has thus far been a relatively small part of residential construction and has been disregarded in the calculations.

Following these observations, the statement was made that with such an analysis corrections could be made at any time to take care of changing known factors. Inasmuch as volume of new residential construction for the first half of this decade has been so far short of what the analysis suggested, it would seem appropriate to review the analysis to see if revision in line with additional facts will explain the situation. If so, it may assist in a better understanding of what is in prospect for the remainder of the decade, and even beyond that.

II. New Data Suggest Corrections

The anticipated increase in population was 10 million for the decade and, on a declining trend, the annual increase would be larger at the beginning than at the end of the decade. Hence the first half of the increase should have been something over 5 million. The actual increase is now estimated at 4.6 million for the first five years of the

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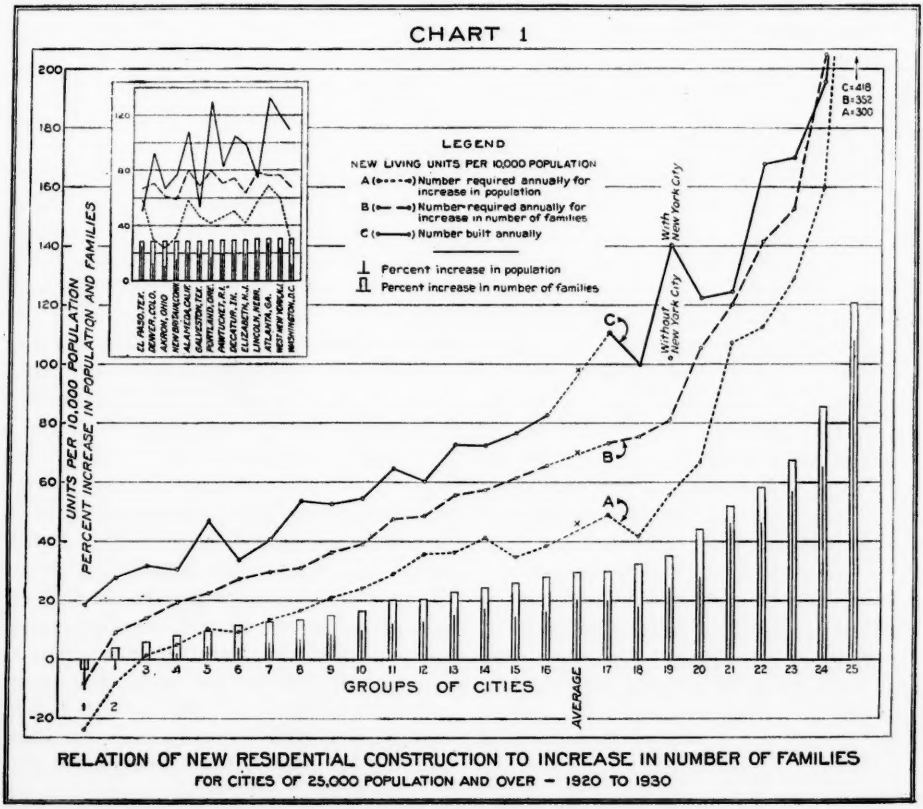
[1] "Population and Building Construction," Vol. X, pp. 35-41.

decade. Furthermore, it has been assumed that the increase would be all urban, whereas some 2.6 million of the increase was in the farm population, leaving only 2 million for urban and rural non-farm.

The increase in rural non-farm population from 1920 to 1930 was practically all in the suburbs adjacent to growing cities, and residential construction in those areas was urban in type. Hence the analysis used the urban classification to include this suburban element, setting up a 1930 urban population of 80,000,000 as compared with the Census figure of 69,000,000.

An increase of 2 million is 2½% of 80 million in five years, or the equivalent of a 5% increase for 10 years, and the chart shows that a 5% increase in population corresponds with the construction of 45 dwelling units per 10,000 population. This includes construction for vacancy and, since the original analysis was made, additional data on vacancy have been furnished by the Real Property Inventory. The cities covered by the inventory showed a 7.7% vacancy in 1934 which indicates that the 7% estimated in the original analysis was conservative. This lends strong support to the suggestion that the allowance on the chart for the indefinite factors—vacancy, demolition, and conversion—was chiefly vacancy and with an excess vacancy on hand it would not be

CHART 1


UNITS PER 10,000 POPULATION
PERCENT INCREASE IN POPULATION AND FAMILIES
LEGEND
NEW LIVING UNITS PER 10,000 POPULATION
A Number required annually for increase in population
B Number required annually for increase in number of families
C Number built annually
Percent increase in population
Percent increase in number of families
With New York City
Without New York City
C=418
B=352
A=300
GROUPS OF CITIES
AVERAGE

RELATION OF NEW RESIDENTIAL CONSTRUCTION TO INCREASE IN NUMBER OF FAMILIES
FOR CITIES OF 25,000 POPULATION AND OVER — 1920 TO 1930

repeated during the present decade. The allowance is approximately 15 units per 10,000 population on the lower part of the chart, which, deducted from the 45, leaves a need for 30 dwelling units per 10,000 population for the present decade.

Also to be considered is the factor of persons per family which had been falling at the rate of 5.6% per decade for a number of decades prior to 1930, and was the equivalent of another 15 units per 10,000 population. The Real Property Inventory again provides some additional data from which a figure of 3.74 persons per living unit is arrived at for 1934, compared with a figure of 3.80 derived from the Census reports for corresponding cities in 1930. The rate of decline in persons per unit since 1930 has therefore been only half the 15 units per 10,000 population shown on the chart. A correction for this factor reduces the indicated requirements to 22½ units per 10,000 population for the present decade. This is a total of 1,800,000 units, or only 900,000 for half the decade.

Actual construction is arrived at from building permit data published by the Bureau of Labor Statistics. These data show that permits issued in 257 cities provided accommodations for 298,823 families from 1930 to 1934, inclusive. Records for these cities go back to 1920 and were the basis for the analysis of 1920-1930 construction, and yet the records for the two periods are not directly comparable. The back-to-the-farm movement since 1930 suggests a parallel movement from the larger or truly urban centers to the more rural community, to occupy dwellings that had been vacated during the previous movement in the other direction, or to take advantage of lower rentals and other living costs. Such a movement might represent a factor of new construction in the truly rural community that did not exist in the larger cities. To that extent the records for the larger cities would not be as representative of the volume of residential construction since 1930 as had been the case prior to 1930. Bureau of Labor Statistics reports since 1933 have been extended to include 819 cities from 10,000 population and over. Comparison of relative volume of construction in the 257 cities with the 819 cities can therefore be made for the years 1933 and 1934 as follows:

	Total Population	*Families Provided for*	
	1930	*1933*	*1934*
819 Cities (Population 10,000 and over)	55,522,000	34,870	29,908
257 Cities (Population 25,000 and over)	46,648,000	25,879	22,063
562 Cities (Population 10,000 to 25,000)	8,874,000	8,991	7,845

It will be noted that the additional 562 cities represent 16% of the total population and 26% of the families provided for, the relation holding for both years. This confirms the assumption that population movement during the depression has been toward the smaller communities and perhaps to the communities which lost population during the boom. The 257 cities cannot be taken as representative of residential construction during the depression as they were during the previous decade. It would seem more logical that for 1930-1934 the calculations of volume of residential construction, other than farm, should be based on total non-farm population of 92 million rather than the 80 million previously set up for urban. As shown in the above table, the 819 cities account for 55.5 million of the total non-farm population, leaving 36.5 million for which no building records are available but which may follow closely the 562 smaller cities rather than the 257 larger

ones. That is, based on the records for the smaller cities with 8.9 million population and 16,800 new dwelling units in the two years, there should have been some 70,000 new living units in the small cities which go to make up the 36.5 million for which no records are available. The total for the cities under 25,000 population was then 86,800 units compared with 47,900 units for the larger cities, for 1933 and 1934. On the same basis, the 1930-1934 construction for the smaller cities is calculated to have been 540,000 compared with records of 300,000 for the 257 cities. Or the total construction would be 840,000 units, compared with the estimate of 900,000 units based on the chart.

The chart was useful primarily to show that the factor of declining persons per family (difference between A and B on the chart) and the miscellaneous factor (difference between B and C on the chart), which included vacancy, demolition, and conversion, held rather uniformly; that is, they were approximately the same regardless of population increase. That does not hold by individual cities, but as an average. Also it brought out the fact that construction from 1920 to 1930 included a considerable allowance for vacancy, demolition, etc., and if the item was chiefly accumulated vacancy, it could not be included in estimates of construction for 1930 to 1940. An estimated required volume of construction for 1930 to 1934 might then be arrived at very simply as follows:

An increase of 2 million people, with 3.74 persons per family, requires 535,000 living units. A decrease from 3.8 to 3.74 persons per family for a population of 92 million (using the total non-farm population in this case rather than the 80 million urban base) sets up an additional 390,000 units, or a total of 925,000 units.

There is not a great difference between the estimated requirements of 900,000 or 925,000 and the estimated actual construction of 840,000 new living units. Actual construction could be somewhat less than requirements based on population increase and size of family because of some conversion of larger units into smaller ones and because of absorption of vacancy.

Conversion from large to smaller living units has been going on all the time and would not be halted as would new construction by unfavorable economic conditions. But, as against the units provided by conversion, there was the demolition which was not taken into account, and the two are about equal, as will be shown later.

Absorption of vacancy is important in the current situation. Data for 73 cities, released by the Federal Housing Administration under date of March 9, 1935, show vacancy increased between 1930 and 1933 and declined between 1933 and 1934, the 1934 vacancy being about the same or only a little below that of 1930. This would agree with conclusions drawn from vacancy data from the Real Property Inventory. The Federal Housing Administration has vacancy estimates from seven cities for the period 1930 to 1935 which show a continuation of reduction in vacancy since 1934. An absorption of a 2% vacancy since 1934 would appear to be a conservative estimate based on the limited data. This is equivalent to providing for 500,000 families. Absorption of 1% vacancy takes care of 250,000 families.

The expected increase in popoulation for the year (800,000 to 1,000,000) would be the equivalent of approximately 250,000 new families. If this increase was all urban (and no farm-to-urban migration), there would be 250,000 units left to be absorbed by decline in

persons per unit, or by demolition in excess of conversion. The latter is probably a minor factor, but if the 250,000 vacancies were absorbed by decrease in persons per family between 1934 to 1935, this would reduce persons per family from 3.74 to 3.70 which is approximately what it would have been if the trend prior to 1929 had continued without interruption (3.80 persons per family in 1930; rate of decline 5.6% per decade).

III. The Near Future

The explanation for the low volume of urban residential construction since 1930 justifies an expectation of appreciably larger volume of such construction for the remainder of the decade. Indications are that the farms will absorb less of the increase in population from now on. The movement back to dwellings that were vacated during the boom years has largely spent itself and will be much less in the future. Much of the excess vacancy in urban territory has apparently been absorbed, and more and more of the increase in number of families will be provided for by new construction. Further improvement in economic conditions generally will encourage a return to more desirable quarters on the part of people who are still living with relatives, or who went back to previously abandoned property. A revival of industry would again draw families from rural sections. All this represents a potential accumulated demand over and above population increase, if and when it is released.

Provision for four million increase in population and a continued decline in persons per family from 3.70 to 3.60 would set up a requirement for 1¾ million dwelling units for the last half of the present decade, or twice the estimated construction for the first half. This estimate is based, of course, entirely on past experience as indicative of what construction is likely to be, without considering what it should be if every family is to have a home of its own or a home of some desirable minimum standard.

The construction of 1¾ million units during the last half of this decade represents an average of 350,000 units annually compared with 180,000 units annually for the first half of the decade, or compared with 700,000 annually for the decade 1920 to 1929. Since 1920 to 1929 might be looked upon as an abnormal period, it might be more reasonable to compare current rate of construction with the average of 450,000 new living units annually from 1910 to 1929.

Current estimates make no provision for demolition, although replacements will eventually be the primary factor in volume of construction as population becomes stable. It was pointed out that demolition has apparently not yet developed to the extent that may have been expected. Such data as are available indicate a demolition of only about five dwelling units per 10,000 population annually.[2]

[2] These data include: Estimated demolition for Denver from 1901 to 1931; actual record for Denver for 1931; records for Washington, D. C., for 1929; for Springfield, Mass., for 1929 and 1930; for Springfield, Ohio for 1932; and for Philadelphia for 1923 to 1929.

The *Federal Home Loan Bank Review* for September, 1935 carries an article on dwelling construction in Holland which has some data on demolition. From 1921 to 1934, inclusive, a total of 78,000 dwelling units were demolished or no longer used as dwellings. That is an average of 5,600 per year, or at the rate of 8 per 10,000 population based on the 1920 population, compared with our rate of 5 per 10,000 mentioned above. The figures are not exactly comparable inasmuch as the Holland records include units converted to other uses not really demolished. Furthermore, the report states that new construction since 1919 has been accompanied by clearance of a majority of the country's slums. In that case, the demolition has perhaps been greater than normal expectation and will be less from now on. Supporting this conclusion, 1934 exceeded all previous years in number of new units built, but the number demolished and converted to other uses was only 65% of the average for the years 1927 to 1931.

A demolition of five units per 10,000 population would not show up in the chart because it was offset by an equal number of dwelling units provided by conversion of large to small units. Reports of the Bureau of Labor Statistics include some records of such conversion for the years 1921 to 1927. A summary of such records shows an average of 4.5 units per 10,000 (Table I).

TABLE I. DWELLING UNITS ADDED BY CONVERSION, BY YEARS

Year	Number of Cities Reporting	Estimated Total Population	Units Added by Conversion	Units per 10,000 Population
1921	68	5,088,000	1,681	3.5
1922	49	5,213,000	2,366	4.5
1923	34	3,050,000	1,857	6.0
1924	49	7,400,000	2,700	3.7
1925	54	5,700,000	2,980	5.2
1926	46	4,600,000	2,346	5.0
1927	25	1,800,000	723	4.0
		32,851,000	14,653	4.5

However, the low volume of demolition raises a serious question as to whether probable life has been set too low, making the expected replacement too high. For discussion of demolition in the original analysis, the hypothetical ages of 40 and 60 years were used to illustrate what the demolition rate might eventually be. Since then the Real Property Inventory has provided some additional data on age of existing dwellings and an analysis of such data for some of the older cities, where age has had time to develop, indicates a probable average age of 120 years, possibly even longer. Analysis of population and construction records for New England seems also to support such a figure.

The age factor is obviously very elastic. No law fixes the years that a dwelling can be used for the purpose, or a date when it shall be destroyed. With good care a well built house can be made to last almost indefinitely, and with poor care or abuse its life may be relatively short. On the other hand, a dwelling may be in good condition and still not suitable for such use because of changed surroundings. Undoubtedly this factor is most apparent during periods of rapid growth and population movements, which has been the general experience in this country to date.

From a study of 1924 demolition records for Philadelphia the Philadelphia Housing Association[3] finds that in the clearing of 936 residential sites,

"dwelling replacement was a small factor in these demolitions. Only 6 of the sites were cleared for new houses and 16 for tenements; 57 were devoted to manufacturing purposes, 161 were for commercial, 520 for public improvements, such as schools and bridge extension, 53 for garages, 104 left clear and the remainder (19) were for miscellaneous uses. . . . . Some gain to better housing came through these demolitions. Thus, 95 back lot dwellings and 118 houses on unsewered streets were removed. But, over 90 percent of the loss in family accommodations was of buildings that still had a long period of usefulness before them."

Sample studies made in Washington, D.C., Portland, Oregon, and Oakland, California, suggest that the apparent average life of dwellings developed under such conditions may not be a safe guide for the future.

A check made in 1933 of the sites of 127 dwellings demolished in Washington during 1929 showed only nine lots still vacant, and occupancy in the others classified as follows:

Present Use	*Dwellings Demolished*
Filling stations	42
Apartments	20
Factories	16
Libraries	14

[3] "Know Your City," March, 1935, by Philadelphia Housing Association.

Stores	9
Offices	6
Dwellings	5
Churches	4
Schools	2

The factor of site obsolescence attributable to city growth and commercial expansion is too obvious in these figures to assume that age of dwellings could have played more than a minor part in the change.

The Portland study covered 328 demolished dwellings. Instead of basing the study on dwellings demolished during any one year, it was based on a certain section of the City. The dates of demolition ran from 1920 to 1931. It was possible from the data obtained to plot an age curve, in fair accord with curves frequently used in such studies, showing the probable average life of all buildings in the plat to be less than 55 years. No doubt the generally used estimate of 50 years for the probable life of dwellings originated from similar observations. This fact was evident, however, that it was not unusual for several buildings on adjoining lots to have been demolished together, and in many cases they represented a considerable difference in age, suggesting site obsolescence and not age as the controlling factor.

A study in Oakland, similar to the one in Portland, undertook to analyze the demolition in a certain area of the city over a period of years rather than demolition of any one year for the entire city. The age curve was practically the same as in the Portland study. The Oakland data, however, showed not only the age distribution for buildings demolished, but also for buildings still in use, and they are practically the same.

Under the Age of	*Dwellings Demolished*	*Dwellings Standing*
20 Years	5%	7%
30 "	20	20
40 "	48	42
50 "	78	72
60 "	97	94
70 "	100	99
80 "	.....	100

Five percent of the dwellings demolished, compared with 7% of those standing, were less than 20 years old; 20% were less than 30 years old in both cases, and so on. In other words, the dwellings demolished come reasonably close to being a fair sample of all dwellings so far as age is concerned. If that is correct, it is rather strong evidence that obsolescence, chiefly site obsolescence, has been more of a factor than age in the demolition of dwellings in this particular area, and raises the suspicion that the same might be true in other fast growing cities.

This has a direct bearing on the long-time prospects for building construction. As previously pointed out, volume of residential construction when population becomes more or less stable, say after about 1950, will depend upon the average life of dwellings, and if that life is to be more than the hypothetical 40 or 60 years, the prospective volume of construction after 1950 will be reduced accordingly.

The Power Program of the Tennessee Valley Authority

By ROBERT W. HARBESON*

MANY of the great electricity supply projects upon which the Federal Government has embarked are but parts of larger programs which include inland waterway, flood control, irrigation, and other developments. The chief of these are the Tennessee Valley Authority's project, Boulder Dam, the Grand Coulee development on the Columbia River in Washington, the Bonneville development on the same river in Oregon, the Fort Peck Dam on the Missouri River in Montana, and the Caspar-Alcova project in Wyoming. The total cost of these six projects, including only the present plans for the Grand Coulee and T.V.A. developments, has been variously estimated from about $675,000,000 to over $775-,000,000, of which a large fraction would have to be allocated to the power phase of the undertakings.[1] The most conservative estimate which the writer has seen of the cost of the projects currently being considered by the T.V.A. is $350,-000,000, of which $169,000,000 is to be allocated to the power development.[2] This article will be devoted to an analysis of the economic aspects of the power program of the T.V.A.

In attempting such an analysis certain difficulties are encountered. In the first place, electricity supply is not the only or even the most important aspect of the Tennessee Valley development. The project is really intended to be an example of comprehensive social and economic planning, including besides power production, the production of fertilizer, improvement of river navigation, flood control, prevention of soil erosion, reforestation, and the reorganization of agriculture and industry in this region. In the second place, the T.V.A. has been in existence only a little more than two years, so that any judgments concerning its policies and achievements must necessarily be tentative. The prospects of the Authority are especially uncertain in view of the legal entanglements in which it is at present involved. Finally, comprehensive and reliable data on the power developments of the T.V.A. are difficult to obtain.

Legal Foundation

Before undertaking to evaluate the work of the T.V.A. it will be necessary to review briefly those provisions of the Muscle Shoals Act of May 18, 1933, under which this body was created and which relate to the matter of electricity supply.[3] The law states that the Tennessee Valley Authority is a corporation organized

"for the purpose of maintaining and operating the properties now owned by the United States in the vicinity of Muscle Shoals, Alabama, in the interest of national defense and for agricultural and industrial development and to improve navigation in the Tennessee River and to control the destructive flood waters in the Tennessee River and Mississippi River Basins."

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[1] 13 *Congressional Digest* 234 (October, 1934); 104 *Electrical World* 33 (September 29, 1934); 105 *Ibid.* 48 (January 5, 1935).

[2] Includes the power properties at Muscle Shoals carried at $25,000,000. See references in footnote 1.

[3] For more details see *Annual Report*, T.V.A., House Doc. No. 83, 74th Congress, 1st Session, for year ending June 30, 1934. See also Ellis Kimble, "The Tennessee Valley Program," 9 *Journal of Land & Public Utility Economics* 325-39 (November, 1933).

The corporation is authorized to build facilities for generating and transmitting power and to enter into contracts for the sale of such power for terms not exceeding 20 years to states, counties, municipalities, corporations, partnerships, and individuals.[4] Five per cent of the gross proceeds from the sale of power produced in Alabama and the same percentage of the gross proceeds from the sale of power produced in Tennessee shall be paid to those states in lieu of taxes. The Authority has recently announced that it was setting aside an additional 7½% of its gross revenue in lieu of taxes, making a total of 12½% for this purpose.[5] It is declared to be the policy of the Authority that the power project shall be considered primarily as for the benefit of domestic consumers, rural and urban; and that the sale of industrial power shall be a secondary purpose, to be used principally to improve the load factor and revenue returns and thereby to permit the lowest possible domestic rates. Finally, it is provided that net revenue from the sale of power or any products manufactured by the Authority, after deducting the cost of operation, maintenance, depreciation, amortization, and an amount deemed by the board as necessary to withhold as operating capital, or devoted by the board to new construction, shall be paid into the Treasury of the United States at the end of each calendar year. No provision is made for counting interest on the investment as one of the costs of the enterprise, but the Authority has voluntarily agreed to include this item in its cost calculations.[6]

A bill embodying a number of significant amendments to the foregoing Muscle Shoals Act became law on August 31, 1935. The important changes affecting the power program of the T.V.A. which were made in this legislation may be summarized as follows:

1. The Authority is given power to construct such dams and reservoirs, in addition to the Wilson, Wheeler, Norris, and Pickwick Landing dams, as may be necessary to provide a nine-foot channel in the Tennessee basin.

2. The Authority is directed in the operation of its dams and reservoirs to regulate the stream flow *primarily* for the purpose of promoting navigation and controlling floods. So far as is consistent with these purposes it may build and operate facilities for generation and transmission of electricity in order to avoid the waste of water power, and to market such electricity so as to assist in liquidating the cost, or to aid in the maintenance of, these projects. The purpose of this new provision may be to help insure the constitutionality of the whole program.

3. Legal sanction is given to the practice of the T.V.A. in regulating power-resale rate schedules.

4. The Authority may loan for a period of not over five years to states, counties, municipalities, and non-profit organizations for the purpose of acquiring, improving and operating existing generating plants, distribution facilities, and interconnecting transmission lines, or for acquiring an interest in such facilities. When the Federal Power Commission approves of these arrangements the Authority may issue bonds to provide the necessary funds, the amount outstanding at any one time not to exceed $50,000,000.

5. The Authority is required to keep

[4] Where a public body or non-profit cooperative constructs and maintains a transmission line tapping a main transmission line of the T.V.A., contracts may run 30 years.

[5] 79 *Congressional Record* 7876 (May 15, 1935).

[6] *Annual Report*, T.V.A., *op. cit.*, p. 34.

a comprehensive record of its activities according to a uniform system of accounts which the Federal Power Commission is directed to prepare, together with pertinent physical data and operating statistics. These data are to be reported to Congress from time to time with appropriate analyses and recommendations. The Authority is specifically required to allocate the value of its properties and to record the cost of power at each power station each year, the total cost of power at all of its power stations each year, the average cost of such power per kilowatt hour, the rates at which sold, to whom sold, and copies of all contracts for the sale of power. The policy of the Act is declared to be that current should be sold on such terms as would make the power projects self-liquidating and self-supporting as soon as practicable.

6. The section of the 1933 Act which details the deductions to be made before arriving at the net income which is to be paid into the federal treasury at the end of each calendar year is replaced by another which merely provides that all revenue shall be paid into the treasury except that which in the opinion of the Board of Directors of the Authority is necessary for conduct of the enterprise. In addition, the Authority is allowed a continuing fund of $1,000,000 for defraying emergency expenses and insuring continuous operation. Presumably the more detailed provisions of the earlier law are rendered unnecessary by the amendments described in the preceding paragraph.

7. The Comptroller General is directed to audit the T.V.A. transactions at such times as he shall determine, not less frequently than once in each fiscal year, but is specifically restrained from making a report on his audit until the Authority "shall have had reasonable opportunity to examine the exceptions and criticisms of the Comptroller General or the General Accounting Office, to point out errors therein, or explain or answer the same, and to file a statement which shall be submitted by the Comptroller General with his report." The expenses of the audits are assessed to the General Accounting Office, except such part of the expenses as may be allocated to the cost of generating, transmitting, and distributing electricity.

The properties at Muscle Shoals taken over by the T.V.A. as provided by law include, among other facilities, the Wilson Dam and power house, the latter having an installed capacity of 261,000 horsepower, and a potential capacity of 612,000 horsepower. There is also a steam generating plant of 76,000 horsepower capacity. The Authority is now building the Wheeler Dam and power house, which will have a capacity of 375,000 horsepower with 43,000 horsepower immediately installed;[7] the Norris Dam and power house, which will have a capacity of 120,000 horsepower; the Pickwick Landing Dam which at present is designed to aid navigation, but which will ultimately have a power house of 270,000 horsepower capacity; and the Guntersville Dam which is designed to aid navigation. Three more dams are being considered for the near future, and ultimate plans call for many more. A transmission line 232 miles in length is now being constructed to connect Wilson, Wheeler, and Norris Dams, and the route selected passes a number of sites for proposed dams. The Authority is also constructing rural electric lines in Alabama and Mississippi. In addition, it

[7] Some publications of the Authority give the ultimate capacity of the Wheeler Dam power house as 430,000 horsepower.

has purchased, or has negotiated to purchase, certain transmission and distribution facilities owned by private companies in Alabama, Mississippi, and Tennessee, although these purchases have been held up by litigation.

The T. V. A. Power Policy

The formulation of a power policy was the first step in carrying out the power program required by the Muscle Shoals Act. A policy was announced on August 25, 1933.[8] In summarized form it is as follows:

1. The business of generating and distributing electric power is a public business.

2. Private and public interests in the business of power are of a different kind and quality and should not be confused.

3. The interest of the public in the widest possible use of power is superior to any private interest. Where private interest and the public interest conflict the public interest must prevail.

4. Where a conflict occurs between public interest and private interest which can be reconciled without injury to the public interest, such reconciliation should be made.

5. The right of a community to own and operate its own electric plant is undeniable. Such a course of action may take the form of acquiring the existing plant or setting up a competing plant, as circumstances may dictate.

6. The fact that action by the Authority may have an adverse economic effect upon a privately owned utility should be a matter for the serious consideration of the Board in framing and executing its power program, but it is not the determining factor. The most important considerations are the furthering of the public interest in making power available at the lowest rate consistent with sound financial policy, and accomplishment of the social objectives which low-cost power makes possible. The Authority cannot decline to take action solely upon the ground that to do so would injure a privately owned utility.

7. To provide a workable and economic basis of operations, the Authority plans initially to serve certain definite regions and to develop its program in those areas before going outside.

8. The initial areas thus chosen are those in proximity to the Muscle Shoals and Norris Dam properties and the transmission line connecting the latter. As previously stated, the Authority has purchased or has negotiated to purchase, transmission and distribution properties of certain private power companies in those parts of Alabama, Mississippi, and Tennessee included in the above areas. Upon completion of these arrangements the Authority agrees, with certain exceptions, that until completion of the Norris Dam, and in any case for not over five years, it will not enter the rest of the territory served by the companies from whom the purchases are made or into the territory of the Georgia Power Company. The companies agree not to enter the area served by the Authority for the same period. Beyond this temporary arrangement the Authority reserves the right to extend its operations into wider areas as the public interest may require.

9. Every effort will be made by the Authority to avoid the construction of duplicate physical facilities, or wasteful competitive practices. Accordingly, where existing lines of privately owned utilities are required to accomplish the Authority's objectives, as outlined above, a genuine effort will be made to purchase such facilities from the private utilities on an equitable basis.

[8] *Annual Report*, T. V. A., *op. cit.*, pp. 22-24.

10. Accounting should show detail of costs, and permit a comparison of operations with privately owned plants, to supply a "yardstick" and an incentive to both private and public managers.

11. The accounts and records of the Authority as they pertain to power will always be open to inspection by the public.

Having before us this summary of the legal foundation of the Authority's program and the latter's statement of the power policy which it intends to pursue, we can proceed directly to a discussion of what seem to be, in the writer's judgment, the points of strength and weakness in the power program.

Evaluation

1. Merits of the Program

One of the merits of the program is the avowed policy of the Authority in including in its cost calculations all items which must be counted by private commercial undertakings. While, as will be pointed out, the adequacy of these calculations is open to some question, they represent a much closer approach to commercial standards than is to be found in the vast majority of governmental business enterprises. Although, as already indicated, the section of the 1933 Act detailing the deductions to be made before arriving at the net income to be paid into the Federal treasury each year has been dropped, it is probable that at least an equivalent check is afforded by the new requirement that the Authority keep its accounts according to a uniform system of accounts for public utilities to be prepared by the Federal Power Commission, and by the statement that the policy of the Act is declared to be that the power projects are to be made self-liquidating and self-supporting as soon as practicable.

[9] *Ibid.*, p. 29.

Likewise the Authority requires municipalities and cooperatives purchasing its current for resale to keep their electric system accounts separate from any other accounts and not to mingle electric system funds with any others, and also to keep their accounts according to a form prescribed by the Authority. The standard contract provides that, after meeting operating expenses, revenues shall be applied to the following *in the order named*: interest on electric system bonds and /or other indebtedness applicable to the electric system, amortization of such bonds and indebtedness, reasonable reserves for new construction and contingencies, payment of taxes at rates equivalent to taxes assessed against similar property, and a return on the equity of not over 6%. Any further revenues must be applied to the reduction of rates.[9] An allowance for depreciation is not mentioned, but such an item appears in the published balance sheet and income statement of the City of Tupelo, Mississippi, with which the first contract was made.[10]

A second merit of the project, in the writer's judgment, is that it embodies the principle that the ownership and control of water-power resources should be in the hands of the government, to be administered as a public trust for the benefit of the people as a whole. It does not follow, of course, that the generation and transmission of electricity should also be a governmental function, and many economists who favor public ownership of water powers do not favor public electricity supply. But certainly our experience with unrestricted private ownership and exploitation of coal, oil, timber, and other essential resources should incline us to favor a different policy with respect to water powers.

[10] 79 *Congressional Record* 7877 (May 15, 1935). See Tables II and III.

A third merit of the Authority's program is that unquestionably, from a technical standpoint, unified development of an entire watershed under a single ownership and control is desirable. This is, of course, an objective which private capitalists seek to attain wherever possible. A primary consideration in hydro-electric undertakings is, necessarily, to secure as steady a flow of water as possible. At the same time storage facilities are very expensive. If there were a number of separately owned up-river plants, each with storage water which would be held or released according to the needs of the individual plant, and a number of separately owned down-river plants having little or no storage, it would be exceedingly difficult to agree on a mutually satisfactory policy with regard to the release of water; far more would be invested in storage facilities than would be required under a single ownership, and probably none of the generating plants could be developed to the most advantageous size.[11]

In the present project Wilson and Wheeler Dams are called "run-of-the-river" plants. When the river is high, much power can be produced at Wilson and Wheeler. When the river is low, little power is available. On the other hand, Norris Dam is primarily a storage dam, with a reservoir which will cover 80 square miles, equivalent to a year's rainfall from several thousand square miles. The power house at this dam is to be connected with those at Wilson and Wheeler. During the wet season the Norris power plant will be shut down and the water stored. During the dry season the water will be released to develop power at Norris, Wheeler, and Wilson.[12] The Authority thus hopes to provide a unified power development which will be able to secure a steady flow of water at the least possible expense for storage facilities, and will be able to secure all the economies of large-scale production.

There is the difficulty, however, of conflicting uses of water, even under unified control. The recent amendments to the Muscle Shoals Act direct the Authority to operate its dams and reservoirs *primarily* for the purpose of promoting navigation and controlling floods. There is a possibility that this requirement might conflict with the interests of the Authority in power production, unless the reservoirs at Norris and other storage dams prove to be very large in relation to the flood producing run-off.[13]

Finally, the policy of the Authority to extend the use of electricity as much as possible is very desirable both socially and economically. The view is widely held among students of public utilities that a very large number of private companies, possibly a majority, have been conservative to the point of short-sightedness in the matter of making reductions in rates, especially domestic rates, which would greatly increase the use of current.[14] Doubtless, also, some

[11] A. E. Morgan, "Bench Marks in the Tennessee Valley," 23 *Survey Graphic* 42 (January, 1934); *Ibid.*, p. 109 (March, 1934).

[12] Descriptive pamphlet published by the T.V.A., p. 5.

[13] The following is pertinent in this connection: "As floods are liable to occur during a comparatively long period in any one year, it is seen that reservoirs may be held empty for three months or more to await information as to precipitation and run-off. As more than one flood may occur in a single season, they must also be emptied as soon as is consistent with due regard to the danger of adding to existing floods

"The problem of operating them safely and effectively is difficult, but the salient fact from the standpoint of power development is that the reservoirs must be empty a considerable portion of the time and that part, and sometimes all, power from them would be intermittent in duration and variable in quantity and not always coincident with the greatest demand for power." (Charles Keller, "Flood Storage Reservoirs: Their Effect on the Power Industry," 5 *Journal of Land & Public Utility Economics* 1-7 at 4 (February, 1929).)

[14] W. A. Prendergast, *Public Utilities and the People* (New York: Appleton-Century, 1933), Chs. 12 and

(*Footnote 14 continued on page 25*)

state commissions have refused to sanction proposed reductions on the ground that the rates would not be compensatory. There is a fundamental contrast between the attitude of private utilities which generally prefer to cut rates after an increase in demand and a lowering of costs takes place, and that of the T.V.A. which cuts rates in advance to stimulate demand and thereby to achieve the lower unit costs which would justify the reduced rates. It is largely a question of the length of time which is considered in connection with the problem of covering costs. It should be remembered, of course, that the T.V.A. is not under the necessity of immediately supporting a capital structure in default of which control of the property passes to creditors. Hence it is in a better position to experiment with immediate, sharp rate reductions designed to increase the use of current, and can undertake a longer developmental period than private enterprises with capital structures to support. While, in view of these facts, and as will be indicated subsequently, questions may be raised concerning the expediency of the particular rate schedule set up by the Authority, there can be little question as to the soundness of the general principle upon which it is acting. The social benefits of a wider use of electricity in reducing toil and elevating standards of living are obvious and have been much emphasized by the Authority, but the economic advantage of more extensive use of electricity is also very important. In this way the fullest achievement of the economies of large-scale production is made possible.[15] The achievements of the Authority in this direction are shown in Table I. Further studies covering the bulk of the communities in this table show increases in the number of residential customers between the month before T.V.A. rates were applied and April, 1935 ranging from 3.33% to 38.42% and averaging 22.68%. Total revenue from residential service in these communities over the same period showed increases ranging from 12.32% to 103.47% and averaging 63.79%.[16] It should be noted that T.V.A. service was available for varying lengths of time in these communities, and that, in general, the longer the period of time it has been available the greater the increase in consumption shown.

In this connection mention should be made of the activities of the Electric Home and Farm Authority, formerly a subsidiary of T.V.A., in increasing sales of appliances through its lending, advertising, and other promotional activities. Dr. A. E. Morgan, Chairman of the Board of Directors of the T.V.A., testified at the hearings on the T.V.A. amendments that in the second half of 1933 only about 6,900 home appliances were sold in the states of Alabama, Georgia, and Tennessee, while in the second half of 1934, with the E.H.F.A. in operation, the sales were about 28,000 pieces; and that he estimated that ¾ of the increase in sales occurred in

(*Footnote 14 continued from page 24*)

15; H. W. Peck, "An Inductive Study of Publicly Owned and Operated vs. Privately Owned but Regulated Public Utilities," 19 *American Economic Review*, Supplement, 197-218, at 209-12 (March, 1929).

[16] The most interest has centered around the Authority's standard residential rate schedule, which is as follows:

First 50 kw. hrs.	3 cents per kw. hr.
Next 150 kw. hrs.	2 cents per kw. hr.
Next 200 kw. hrs.	1 cent per kw hr.
Next 1000 kw. hrs.	.4 cent per kw. hr.
All in excess	.75 cent per kw. hr.

Minimum bill, 75 cents per meter.

For these and further details as to rate schedules see *Annual Report*, T.V.A., *op. cit.*, pp. 35-36.

[16] T.V.A., Department of Electricity, Division of Rates, Research, and Economics, *Statistical Bulletin No. 6*, "Disposition of Consumers' Savings under T.V.A. Rates," Table II, p. 7.

TABLE I. RELATIVE INCREASE IN VOLUME OF RESIDENTIAL CONSUMPTION IN 30 COMMUNITIES UNDER T.V.A. RATES*

Community	Duration of T.V.A. Service as of April 30, 1935	Date of Initial Delivery	Increase in Residential Consumption
Muscle Shoals City, Ala.	19 months	Oct. 14, 1933	50%†
Tupelo, Miss.	15 "	Feb. 7, 1934	140
Alcorn County, Miss.	11 "	June 1, 1934	92
Athens, Ala.	11 "	June 1, 1934	157
Mississippi Power District:			
Baldwyn, Miss.	11 "	June 1, 1934	156
Blue Mountain, Miss.	11 "	" " "	119
Booneville, "	11 "	" " "	83
Burnsville, "	11 "	" " "	155
Fulton, "	11 "	" " "	234
Golden-Belmont, "	11 "	" " "	116
Guntown, "	11 "	" " "	255
Hickory Flat, "	11 "	" " "	69
Iuka, "	11 "	" " "	180
Myrtle, "	11 "	" " "	97
Nettleton, "	11 "	" " "	83
Potts Camp, "	11 "	" " "	10
Saltillo, "	11 "	" " "	130
Shannon, "	11 "	" " "	83
Sherman, "	11 "	" " "	87
Tishomingo, "	11 "	" " "	93
East Tupelo, "	11 "	" " "	350
Verona, "	11 "	" " "	111
Wheeler, "	11 "	" " "	92
Pontotoc County, "	11 "	" " "	122
Amory, Miss.	8 "	Sept. 2, 1934	46
Lauderdale County, Ala.	6 "	Oct. 20, 1934	210
Colbert County, Ala.	5 "	Dec. 4, 1934	133‡
New Albany, Miss.	6 "	Nov. 12, 1934	63
Pulaski, Tenn.	4 "	Jan. 4, 1935	53
Dayton, Tenn.	3 "	Feb. 1, 1935	18

* T.V.A., Department of Electricity, Division of Rates, Research and Economics, *Statistical Bulletin No. 6*, "Disposition of Consumers' Savings Under T.V.A. Rates," Table IV, p. 11.
† Percentage increase from date of earliest available statistics, October, 1934.
‡ Initial service to residential consumers in February, 1935.

communities other than those using T.V.A. power.[17]

2. *Weaknesses of the Program*

As an offset to the important merits of the Authority's program there are certain features of its policy the soundness and equity of which, in the writer's judgment, are questionable. Before undertaking any criticisms, however, it is necessary to clarify the meaning of the now famous "yardstick" principle, first enunciated by President Roosevelt in a campaign speech at Portland, Oregon, in September, 1932. The President said in part:

"It is perfectly clear to me and to every thinking citizen that no community which is sure that it is now being served well and at reasonable rates by a private utility com-

[17] *Hearings* before the Committee on Military affairs, House of Representatives, 74th Congress, 1st Session, on Amendments to the T.V.A. Act, Vol. 2, pp. 589-90.

Mr. Thomas R. Tate, Director of the National Power Survey for the Federal Power Commission testified at the same hearing as follows:

"I have talked with a good many utility men, who say that that is one of the bars to increasing domestic consumption, the high cost of appliances, and I have talked with others who state that the utilities industry ought to feel—I have in mind Mr. Morrow, the editor of the Electrical World—that they ought to feel deeply indebted to the T.V.A. for the free advertising which they got on the basis of low-cost appliances and the sale of appliances which is taking place all over the country, largely as a result of the efforts of the T.V.A. in that territory." (*Ibid.*, Vol. 2, p. 695.)

pany will seek to build or operate its own plant.

"But on the other hand, the very fact that a community can, by vote of the electorate, create a yardstick of its own, will, in most cases, guarantee good service and low rates to its population. I might call the right of the people to own and operate their own utility a 'birch rod in the cupboard, to be taken out and used only when the child gets beyond the point where mere scolding does any good.'

"That is the principle that applies to communities. I would apply the same principles to the Federal and State Governments."[18]

The yardstick idea as expressed in the foregoing, in the writer's judgment, cannot mean more than that the T.V.A. and similar projects should provide the information necessary to enable localities to determine whether their costs and rates have been reduced as far as possible. It cannot mean, as is sometimes implied, that the T.V.A. costs and rates should be the ones actually prevailing in communities generally, because of a large number of factors which compel the minimum obtainable costs and rates to vary with localities and regions.

Although, as previously indicated, the policy of the Authority has been to include in its cost calculations all items which would have to be counted by a private enterprise, and although the continuance of this policy presumably will be insured by the uniform accounting requirements imposed by the recent amendments to the T.V.A. Act, a question arises as to the adequacy of the calculations in some cases. In the first place, certain questions may be raised concerning the Authority's capital account. This account is especially important because the capital investment per kilowatt of capacity is much greater for hydro-electric plants than for steam power plants. The Authority is directed by law to find the "present value" (presumably in the sense of cost of reproduction) of the Muscle Shoals properties. In carrying out this mandate it is using unit cost data derived from the Wheeler Dam project, a project similar to the one at Muscle Shoals and one which is being constructed under conditions almost identical with those which would prevail if the Wilson Dam were now being built.[19] The power properties at Wilson Dam, including the stand-by steam plant, cost the government about $60,000,000. The dam and power plant alone cost about $47,000,000. The figure for their present value has not yet been determined, but for Wilson Dam and power plant the estimate is $33,000,000, of which $22,000,000 would be allocated to the power project.[20]

Whether reproduction cost or original cost should be used for valuation purposes has been extensively and bitterly debated. But it would seem that since the Authority proposes to use a reproduction cost valuation for this part of its property, based on a period of low prices, to be consistent it will have to increase this valuation in the future whenever a marked rise in the price level occurs. The propriety of the interest element in the yardstick thus depends upon whether the Authority will adhere consistently to reproduction cost valuation in periods of high prices in the future. Otherwise the use of reproduction cost for this part of its property, while using original cost for the rest, will lay it open to the accusation of artificially reducing its investment account. The Authority's explanation of this procedure is that the original cost of the property in question was

[18] 13 *Congressional Digest* 235 (October, 1934).

[19] *Annual Report*, T.V.A., *op. cit.*, pp. 33-34. The Authority has also investigated the probable market value of the property.

[20] 79 *Congressional Record* 7876 (May 15, 1935.)

abnormally increased by the delay and interruptions attending its construction. This is, to be sure, a mitigating circumstance, but it has not been proved that this explanation removes the significance of the discrepancy between construction costs at pre-depression price levels and reproduction cost at current prices. Likewise, the cost of constructing distributing systems in communities purchasing T.V.A. current may be reduced 45% by reason of free grants for such construction work from the Public Works Administration, thereby also artificially reducing the investment account on which a return is to be earned. This arrangement, however, is at present held up pending a decision by the Supreme Court.

Another difficulty is that the bulk of the T.V.A.'s expenditures for dams will be applicable jointly to power production, flood control, and river navigation, and the portion of such joint costs assignable to power production must be arbitrary. Hence an indeterminate element is introduced into the yardstick. Professor H. M. Gray has recently urged that in such multiple-purpose projects the joint costs are incurred for the general good rather than for individual benefit and hence should be a general charge upon the public revenue in the same way as other social services, while separable and special costs incurred for the benefit of particular individuals, groups, or communities should be borne by the direct beneficiaries. This means that electricity produced in connection with multiple-purpose projects should be treated as a by-product and charged only with the separable costs which can be allocated to it, such as power house, turbines, generators, transmission lines, and auxiliary equipment. Professor Gray points out that single-purpose, privately owned plants, which must recover all costs from the sale of electricity alone cannot compete with multiple-purpose, publicly owned enterprises when the latter are operated on the foregoing principles. He holds, however, that this is not a case of "subsidy" or "unfair competition," but the displacement of one institution by another economically and socially superior. But he recognizes that such multiple-purpose public enterprises cannot properly serve as yardsticks for single-purpose, privately owned firms which are fundamentally different in nature and function.[21]

A question has been raised concerning the propriety of the Authority's policy in charging interest on its investment at a rate (3½%) only slightly above that prevailing on government borrowing. If the Authority's power rates are to constitute a yardstick for those charged by private utilities, in the sense of demonstrating what the latter rates might legitimately be, a percentage for return on the investment should be allowed equal to that which private utilities would have to pay, under honest, efficient, and economical management, in order to secure the necessary capital. It may be pointed out, further, that the lower cost of money enjoyed by the T.V.A. does not represent a saving to society as a whole. Investors are willing to supply funds to a government enterprise such as this at a lower rate of interest than to a private company because the former is backed by the taxing power of the government, which results in the risks of the enterprise being shifted in large part to the taxpayers. The cost of carrying the risks of the enterprise is thus merely redistributed, being borne in large part

[21] H. M. Gray, "The Allocation of Joint Costs in Multiple-Purpose Hydro-Electric Projects," 25 *American Economic Review* 224-35 (June, 1935).

by the taxpayers at large rather than by investors in the enterprise in question. The proportion of the risk shifted to the taxpayers is measured by the interest rate differential in favor of the government enterprise.

A word needs to be said concerning depreciation. The Authority's allowances for this item have been criticized by Comptroller-General McCarl and by others.[22] The writer is unable to pass upon the adequacy of the Authority's depreciation allowances, but in view of the criticisms which have been advanced it would seem wise for the Authority to have this item checked by competent outside experts.

Taxes constitute an important item which must be included in any rate yardstick. If the results of a governmental business enterprise are to be compared with those of a private company, the former must include as one of its costs a sum equal to the taxes that it would pay if the undertaking were privately owned. As previously stated, the Authority is setting aside 12½% of its gross income in lieu of taxes. The percentages set aside for this purpose by The Commonwealth and Southern Corporation and its operating subsidiaries in T.V.A. territory in 1934, based upon data in Moody's *Manual of Public Utilities*, are as follows:

Company	*Percentage Taxes to Gross Income, 1934*
Commonwealth and Southern Corp.*	12.2%
Alabama Power Co.	14.4
Georgia Power Co.	9.5
Tennessee Electric Power Co.	15.8

*This Company controls properties elsewhere than in this part of the South, but the great bulk of its interests are in this region.

This result has been held to demonstrate that the Authority is on a par with private power companies in the same region in the matter of taxes.[23] The fact is, however, that the comparison involves a statistical fallacy, since the items compared are not homogeneous. The T.V.A. percentage applies to revenue from *wholesale* sales, while the figures for the private power companies are based upon revenues from *both wholesale and retail* sales.[24] As already explained, the municipalities purchasing T.V.A. current are required to count as an item of cost a sum equal to the taxes which their distribution systems would pay if privately owned. We do not know how the *total* tax burden of the Authority and the municipal distribution systems purchasing its current for resale compares with that of private companies on their entire generation, transmission, and distribution business; nor do we know how the tax burden of the Authority on its wholesale business compares with that of private companies on their wholesale business alone.[25] These are the really valid and significant comparisons.

It is necessary to consider also the financial results of the application of the low domestic rates prescribed by the Authority in communities purchasing its current for resale. A balance sheet and income statement of the City of Tupelo, Mississippi, Electricity Department are given in Tables II and III. These show handsome returns to the municipality under T.V.A. rates, but even if such returns be typical of the great majority of communities buying T.V.A. current they are not conclusive

[22] For Comptroller-General McCarl's objections see "Checking Up On the T.V.A.," 16 *Public Utilities Fortnightly* 102-3 (July 18, 1935).

[23] 79 *Congressional Record* 7876 (May 15, 1935).

[24] The gross income basis for measuring tax burdens, as used by the Authority, is accepted here for purposes of analysis.

[25] In the case of Tupelo, on the basis of the data in Table III, it appears that the total tax burden on the current sold in that community was 8.98% of the *total* gross revenue of the Authority and the City.

TABLE II. BALANCE SHEET, TUPELO ELECTRICITY DEPT., AS OF JANUARY 31, 1935*

Assets		
Plant and equipment		$138,762.41
Current assets:		
Cash	$16,319.80	
Accounts receivable	9,208.36	25,528.16
Miscellaneous assets		3,334.65
Deferred charges		1,856.67
Total Assets		$169,481.89
Liabilities		
Investment, City of Tupelo		$ 79,261.26
Consumers' surplus invested in plant		1,522.22
		80,783.48
Funded debt		36,250.00
Current liabilities, accounts payable		6,658.53
Accrued liabilities		11,644.04
Miscellaneous liabilities		5,834.65
Reserves:		
Depreciation	$ 4,958.57	
Bond retirement	1,651.74	6,610.31
Unappropriated surplus		21,700.88
Total Liabilities		$169,481.89

* 79 *Congressional Record* 7877 (May 15, 1935).

In the first place, they depend upon the adequacy of the depreciation allowances on the distribution system. In the second place, they depend upon the propriety of the wholesale rates charged the community by the Authority. An increase of one mill per kilowatt hour, or 16⅔ %, in the wholesale rate now charged the City of Tupelo, would have reduced the net income of the latter's Electricity Department by ¼. The wholesale rates of the Authority at present are not fully compensatory. With the Muscle Shoals properties carried at $22,000,000, the Authority's property account as of June 30, 1934 was $33,293,698.07 against which there was available for the year ending on the foregoing date only $548,657.58 for interest, depreciation, and reserves.[26]

It is too early, however, to pass a final judgment concerning the propriety of these rates from the revenue standpoint, since they were designed to be compensatory only when, as, and if a much larger output of current than that existing at present has been built up. The Authority very properly points out that every utility in starting a new enterprise or in experimenting with reduced rates must expect a developmental period to elapse before it receives compensatory returns, and that in this case the development of business has been further retarded by litigation.[27] A question arises, however, as to whether, apart from the factor of litigation, the

TABLE III. STATEMENT OF INCOME AND EXPENSE, TUPELO ELECTRICITY DEPT., FOR YEAR ENDING JANUARY 31, 1935.*

Item	Amount	Per Cent of Gross Operating Revenue	Per Kw. Hr. Sold
Gross operating revenue	$88,295.04	100.00%	1.55c
Operating expenses:			
Cost of power purchased	36,449.01	41.28	.64
Distribution—Operation	3,796.16	4.30	.07
Maintenance	980.53	1.11	.02
Commercial and new business	1,114.37	1.25	.02
Utilization	569.77	.65	.01
General	2,052.64	2.33	.03
Total operating expenses	44,962.48	50.92	.79
Taxes	6,657.32	7.54	.12
Depreciation	5,227.21	5.92	.09
Uncollectible accounts	69.89	.08	....
Total	56,916.90	64.46	1.00
Net operating revenue	31,378.14	35.54	.55
Non-operating revenue:			
Miscellaneous	647.80	.73	.01
Gross income	32,025.94	36.27	.56
Deductions from gross income:			
Interest	2,580.56	2.92	.04
Return on city's investment	4,570.54	5.18	.08
Net income	24,874.84	28.17	.44
Appropriations to long-term debt:			
Retirement reserve	3,173.96	3.59	.06
Balance to surplus	$21,700.88	24.58	.38

* 79 *Congressional Record* 7877 (May 15, 1935).

[26] *Annual Report*, T.V.A., *op. cit.*, pp. 56-57.

[27] Note the following by Mr. D. E. Lilienthal, Director of the T.V.A. power program:

"If we fix our rates at the present time on the basis of the extremely limited market which is available—the market was virtually monopolized by others when T.V.A. was placed in charge of Wilson Dam, and it is extremely limited now because of litigation—none of it could be sold because the cost per kilowatt-hour would be so high that no one would use it. So it would defeat itself." (*Hearings* on T.V.A. amendments, *op. cit.*, Vol. 2, p. 823. See also *Ibid.*, pp. 721-22, 769-70.

developmental period for the T.V.A. power projects may not be longer than that for which a private enterprise could afford to plan. Although, as Table I shows, the low resale rates prescribed by the Authority have brought a gratifying increase in consumption and revenue and demonstrate the soundness of the general principle upon which it is acting, the facts remain that the aggregate business thus far developed has not been large, that a large part of the population in T.V.A. territory is economically and socially backward, and that the level of incomes prevailing in many parts of this region is exceedingly low. Were these not the facts the Authority would not have as one of its main objectives the economic reorganization and rehabilitation of this region. While the Authority's policy may be readily defended from the social welfare point of view and while its wholesale power rates may *eventually* be fully compensatory, it may be questioned whether these rates constitute a proper yardstick for private enterprises which even under the most enlightened management could not afford to run the risk of experiencing such a long developmental period.

The T.V.A. has certain miscellaneous advantages, such as the right to use the franking privilege and the right to get special governmental rates on the railroads, although the savings from these sources are trifling when reduced to a per-kilowatt-hour basis. As an offset to these advantages, the Authority claims to pay higher wages than the private utilities in the same region.[28]

An aspect of the Authority's power program which has received considerable attention is its bearing on the question of the creation of excess capacity for the production of electricity, and the consequent effects on investors in private utilities. Without doubt the whole matter of excess capacity has been grossly exaggerated, and the opportunity seized to create groundless concern among private utility investors. In the first place, the Authority has made clear that it proposes to install generating capacity and to build transmission lines only as needed, and that it will make every reasonable effort to avoid duplication of facilities and to protect prudent investment in private utilities.[29] In the second place, the findings of the National Power Survey made by the Federal Power Commission must be considered. These findings are that with a return to the 1929 level of business activity the power consumption for the country as a whole would be an estimated 20% above 1929 consumption, which has been the maximum up to the present; that for Alabama, Georgia, Tennessee, and eastern Mississippi the consumption would be 23% above the previous maximum; that under these conditions there would be a power shortage in various sections and especially in the Southeast, if present capacity were not increased; and that at the present time in the latter district there is a minimum of spare capacity, the amount falling short by about 100,000 kilowatts of being a normal reserve for expansion.[30]

On the other hand, however, the National Power Survey has been criticized for overstating the degree to which obsolescence reduces the economical use of existing plants and for including in its estimates of necessary capacity a substantial allowance for military preparedness.[31] With regard to the Authority's

[28] 79 *Congressional Record* 7877 (May 15, 1935).

[29] See the Authority's power policy, *supra* p. 22; also *Hearings* on T.V.A. Amendments, Vol. 2, p. 775.

[30] *Hearings* on T.V.A. Amendments, Vol. 2, pp. 681-91.

[31] "T.V.A., Pt. II: The Power Issue," 11 *Fortune* 8ff (May, 1935). See also A. R. Eckler, "Present

(*Footnote 31 continued on page 32*)

policy, it would seem that the series of dams which it is building may constitute an important influence retarding the potential expansion of private power companies in this region (at least in the generation and transmission of electricity), by providing great potential generating capacity which the Authority can utilize as needed. This influence will in greater or less degree offset the benefit of the T.V.A.'s example in reducing rates so as to encourage the use of electricity, a factor favoring the expansion of private power enterprises in this territory. In general, it would seem that, while investors need not be seriously concerned for the security of prudent investments now existing, they cannot look forward to the advantage of participating in a rapidly expanding utility industry to the same degree as would be possible if the T.V.A. were not in the power business and the managements of private companies pursued enlightened rate policies.

Last of all, the writer objects to the principle that one of the chief purposes of the T.V.A. and similar undertakings should be to serve as a regulator of private utilities, as an alternative to commission regulation or complete public ownership. It is clear that commission regulation at present has serious deficiencies because of interference by the courts, political control of some commissions by private utilities, and for other reasons. This being the case the writer feels that the necessary steps should at once be taken to make commission regulation effective. The recent Public Utilities Act of 1935 is an important move in this direction. Failing this, the only suitable alternative, in the writer's judgment, is public ownership once for all. The writer, however, has never been convinced that public ownership would solve the problems which, it is said, can never be solved under regulation. The problems would remain in different guise. Would not the same circumstances which now make regulation unsatisfactory—inefficient and corrupt officials, political pressure, an indifferent electorate—cause the situation to be unsatisfactory under public ownership also? The fundamental question, whether under public ownership or public regulation, concerns the ability of the people to govern themselves intelligently in a democracy.

But in any case, the development of publicly owned utility enterprises paralleling private enterprises for the sole purpose of regulating the latter is, in the writer's judgment, of very dubious economic merit, because it may result in unwarranted impairment of private investments, needless duplication of facilities, excess capacity, and inability to secure the full economies of large-scale production.[32] The T.V.A. and similar projects, while not necessarily guilty in these respects, ought to justify themselves otherwise than as alternatives to commission regulation or complete public ownership of public utilities.

(*Footnote 31 continued from page 31*)

Central Station Capacity in the Electric Power Industry" 14 *Harvard Business Review* 74-89 (Autumn, 1935). Dr. Eckler concludes that the situation as to power capacity is not as critical as the report of the Federal Power Commission would indicate; that generating equipment in central stations should be able to produce about 20% more current than in the year ending June 30, 1935; and that of the states in T.V.A. territory, in 1934, Tennessee, the Carolinas, and Georgia have enough spare capacity to allow considerable expansion in loads, while Kentucky, Alabama, and Louisiana may soon be able to absorb some T.V.A. power.

[32] Mosher and Crawford, *Public Utility Regulation* (New York: Harper & Brothers, 1933), pp. 507-8.

Western Land Policies and Recent Ownership Trends

By ROLAND R. RENNE*

PRESENT land ownership patterns resulting from our earlier policies of western settlement are significant factors accounting for existing maladjustments in land utilization in the Great Plains area. For almost 150 years the only apparent idea behind the federal land policy was to get the vast public domain into private hands. Farm, forest, and range country was parcelled out to would-be farmers and stockmen without the slightest attention to the nature of the land or the use to which it would be put. Such a policy was poorly fitted to serve either public or private interests. The 80 acres granted under the original Homestead Act of 1862, while perhaps sufficient for a farm in the humid prairies, was far too small to be an economical unit for either dry farming or range use in the more arid West.

Historical Background

Even when this fact became generally appreciated, it was believed that merely increasing somewhat the size of the free homestead would solve the problem. The Enlarged Homestead Act of 1911 and the Stock-Raising Homestead Act of 1916 permitted the entry of 320- and 640-acre homesteads, respectively. But these units were far too small for efficient use of the range. Studies by the Montana Experiment Station show that a minimum unit of 200 head of cattle is necessary on the average to enable an operator, entirely dependent on this enterprise, to have an income above a bare subsistence level. With the soil characteristics and carrying capacity typical of much of the western range country, a minimum of 30 to 40 acres of range per head of cattle is necessary. In other words, the minimum individual range unit, unless accompanied by supplementary feed from grain or irrigated farming, requires between 6,000 and 8,000 acres, or at least 10 sections instead of one. Even where the land is suitable for farming,[1] most of it is such that more than 800 acres are needed under a summer fallow system to insure an economical operating unit.

The settlers who took up land in quarter, half, or whole sections in the West under the Homestead Laws did not know the limited and varying conditions to which they would be forced eventually to adapt themselves. Neither did legislators, government officials, and others instrumental in developing the West. No detailed data on climatic conditions and other essential factors were available. The first few years of the period of heaviest settlement (1908 to 1919) were very favorable and heavy yields and high prices were secured. These early favorable conditions misled the settlers into believing the western semi-arid region was very similar to the more humid areas from which they had migrated. As a consequence, they established the same patterns of production technique, commerce, and community structure with which they were familiar in the Middle West and East. Thousands of acres were broken which are distinctly submarginal for farming.

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[1] An analysis of 12 representative counties of Montana shows that only about ⅓ of the land is farm land, the balance being classed as grazing.

Prior to the influx of homesteaders and the consequent fencing of the range, big cattle outfits ran cattle over the land. These big cattlemen made desperate efforts to keep their large units intact, but most of them were not successful. They had two weapons to use against the homesteader. They could either drive him out by threatened attacks on his person and his property, or they could openly buy him out. Neither alternative was entirely satisfactory. Range warfare was likely to prove as costly to the big cattle baron as to the small homesteader. The large cattlemen could not afford to pay the price the land was commanding for farming purposes. Western cattlemen estimate they cannot afford to have more than $40.00 per head of cattle invested in land. If they have much more than this the overhead charges, on the average, are too large. They can, therefore, afford to pay only $1.00 per acre for land with a carrying capacity of one head per 40 acres. The land commanded a much higher price than this for farming purposes, particularly during the first few unusually productive years which followed breaking the sod.

Unable to buy out the homesteader, the stockmen in desperation competed among themselves in bidding for use of what private range was available for leasing. Their problem was further complicated by eastern speculators who bought up land in quarter or half sections in the belief that land values would rise through rapid settlement or through discovery of oil or valuable minerals. Thus innumerable small, absentee-owned parcels of land were scattered in shotgun fashion over a large part of the West. In some areas single operators might lease from a dozen or more owners. Leasing from widely scattered, usually unknown individuals, put the operator in an uncertain position with no assurance from year to year that he could maintain intact his entire operating unit, or that his leases would not be raised by the desperate competition of a neighbor cattleman who, because of homesteaders, had lost part of the range he had been accustomed to use and upon the basis of which he had built up his cattle numbers. This insecurity did not make for planned use of the range, but encouraged all stockmen to overgraze the land and run cattle and sheep over whatever federal lands remained unappropriated.

Present Ownership Patterns

In order to illustrate more specifically the land ownership patterns resulting from the above policies of planless settlement, a detailed analysis was made of the ownership of Montana lands. This analysis shows the ownership of all land in the State except railroad and other rights-of-way, highways, and lands within the boundaries of cities and towns or platted subdivisions. The facts revealed by this analysis are both surprising and significant.

The ownerships were grouped into three main divisions: (1) public agencies, (2) corporations, and (3) private individuals. Lands owned by public agencies were in turn divided into: (a) federal holdings, (b) State lands, (c) county lands, and (d) miscellaneous holdings such as those of cities and towns or lands owned by one county in another county or counties. Corporate-owned lands were divided into: (a) railroad lands, (b) investment and mortgage company holdings, (c) holdings of commercial banks, (d) insurance company lands, (e) Federal Land Bank tracts, (f) Joint Stock Land Bank lands, and (g) holdings of miscellaneous corporations such as sheep and cattle

companies, lumber and mining companies, dude ranches, fraternal organizations, etc. Lands owned by private individuals were divided into: (a) those held by people residing within the State, and (b) those owned by non-residents of the State.

This classification of ownerships serves several purposes. (1) It shows the location and extent of non-taxpaying lands. (2) The record of county lands shows where land-use maladjustments and resulting tax delinquency have been most severe, and furnishes a guide in making both public and private commitments for the future. (3) Corporate-owned lands such as those of insurance companies, land banks, mortgage companies, and commercial banks show where appraisals have been too high and foreclosures common. (4) These corporate lands combined with county owned lands indicate the amount and location of land to be sold in the near future. (5) Ownership of non-resident individuals shows the amount and location of greatest speculative purchases. (6) The analysis as a whole shows where absentee ownership, tenancy, and farm management problems are most acute.

Ownership by Public Agencies

Nearly ½ (44%) or approximately 41,000,000 acres of the land area of Montana is owned by public agencies and is therefore non-assessable for taxes to support community and local governmental services. This large acreage is principally the result of setting aside comparatively large tracts by the Federal Government for national forests, national parks, and Indian reservations. Of the 33,000,000 acres of land in Montana owned by the Federal Government, approximately 16,000,000 acres are in national forests, 1,172,000 in national parks, and 8,500,000 in Indian reservations. The remaining 7,300,000 acres of federally owned land are mostly in small, scattered, unappropriated and unreserved tracts, many as small as 40 acres, which have not been homesteaded or purchased. These remaining scattered parcels are considerably below average in quality.[2] This is to be expected since the best lands were usually taken up first by the settlers and those which remain vacant or unpurchased are, as a rule, below average in quality or in such small tracts as to be uneconomical as farm units. These are the lands which have been so badly exploited and overgrazed by any and all who could use them.

Map I shows where federal lands are relatively greatest and where patenting of the public domain through private entry has been most complete. National forests are principally responsible for the high percentage of federal lands in the western third of the State and along the southern border, while unpatented Indian lands account for the high percentage in Big Horn, Roosevelt, and Valley Counties. Federal lands in the above counties are for the most part blocked out into large tracts and well supervised and controlled, but in the central and eastern farming counties

[2] A classification of lands in 12 counties covering more than 21,000,000 acres, based on a soil reconnaissance made by the Montana Experiment Station in cooperation with the U. S. Bureau of Soils, shows that the quality of federal lands is lower than the average of all lands in these counties. Thirty-four per cent of the total area of these counties is farm land, while only 17.2% of federal lands is of this character. Approximately ⅔ of the federal lands are grazing lands, while only slightly more than ⅓ the total area is in this class. Only 5% of the total area is mountains and forests but 12.7% of all federal land is in this category. Almost ⅓ of all federal lands is of the lowest grade grazing land (with carrying capacity such that 55 or more acres per animal unit or 1,000 pounds of live weight of steer for a 10-months' grazing period are required), while less than ⅙ of all lands in these counties is of this grade.

the problem of control and use of the small, scattered federal parcels is acute.

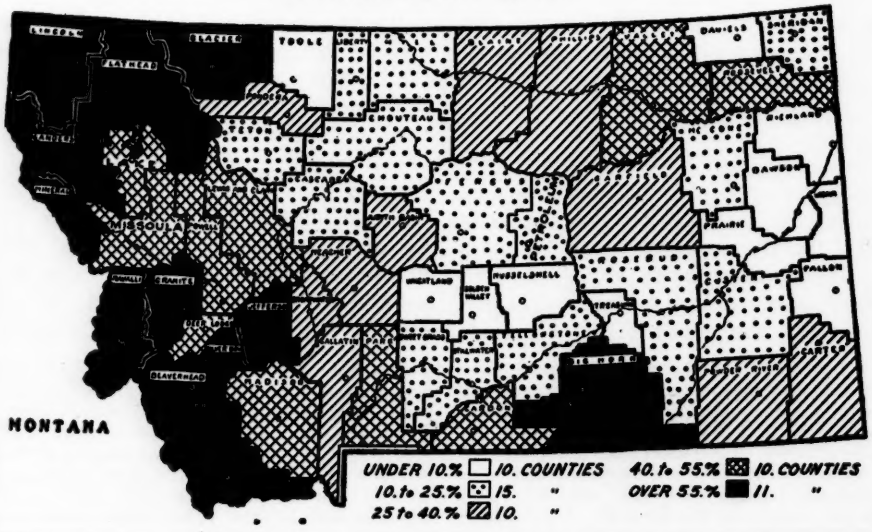
The Federal Government reserved to the State of Montana for the support of public schools and certain state institutions a total of 5,856,720 acres. Of this amount the State still owns 5,256,000 acres, some of which have been sold, but the entire purchase price has not been paid and title still rests with the State. Ordinarily, the State received sections 16 and 36 of each township for support of its public schools, but in counties where national forests, Indian reservations or national parks are located, it received lands instead in nearby counties. Consequently, some counties have proportionately more State lands than others. In Daniels County, for example, state lands comprise 28.4% of the total and constitute a serious tax problem, while in others only 1 or 2% is so owned.

County governments own 2,526,000 acres, or 2.7% of the land area of the State. These lands have been acquired through tax deed because of continued tax delinquency. More than five times this amount are three years or more delinquent and therefore subject to tax deed, but for various reasons most of the counties have not been very aggressive recently in taking title.[3] In some counties more than 10% of the land area is owned by the county, while in others less than 5/100 of 1% is so owned. Map II shows that county

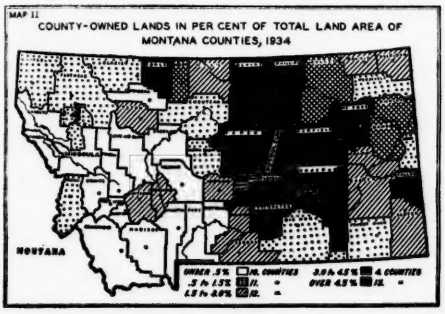
[3] County commissioners and others feel that farmers will pay their delinquent taxes when business conditions and prices improve and the drouth and grasshopper ravages subside. They have, therefore, been slow to take tax deed title for delinquency. The 1933 Extraordinary Legislative Session passed a bill extending the period of delinquent tax redemption until January 1, 1935, and the 1935 Legislative Session further extended the final date to December 1, 1935. The practical effect of these two measures has been to forestall the taking of tax deeds in the majority of delinquencies. Consequently, very few tax deeds have been taken since 1932.

MAP I

FEDERAL LANDS IN PER CENT OF TOTAL LAND AREA OF MONTANA COUNTIES, 1934



owned lands are concentrated largely in a belt extending through the east central portion of the State. The three counties of Phillips, Petroleum, and Musselshell own more than ⅛ of the total county owned lands, while their area comprises but little more than 1/20 of the State's total. County lands in these three counties average 14.2% of their total privately owned lands (total area less lands owned by public agencies). Five-eighths of all county owned lands in the State are held by 11 counties, including these three and the eight adjacent to them. In this belt of counties the prob-



lems of maladjustments in land use and heavy tax delinquency are most acute. These lands hang like a cloud over the land market in these counties and constitute an important factor in determining land values. Since there is no adequate market for these parcels and only the better tracts and strategically situated ones are leased, many of them are used by any and all who can appropriate and exploit them. This further reduces their productiveness and makes it increasingly difficult to get them back on the tax roll or into systematic utilization through which they will be properly controlled and developed.

Miscellaneous public holdings include lands owned by cities and towns for airports, water reservoirs, and cemeteries; lands owned by one county in another county or counties; and lands created by changing river channels, ownership of which is not definitely established as among different public agencies. The acreage of these miscellaneous holdings totals only 63,000 acres, or only 7/100 of 1% of the total area of the State.

Corporate Ownership

Fourteen per cent (more than 13,000,000 acres) of the land area of Montana is owned by corporations. The Northern Pacific Railroad owns approximately 5,000,000 acres, the largest corporate holding in the State. This Railroad received approximately 20,480,000 acres in Montana as a grant from the Federal Government to assist it in building its western road.[4] The difference between this acreage and the present holdings represents the amount sold to settlers and others. The 5,000,000 acres which remain are found principally in 10 eastern counties,[5] but railroad lands also occur in other counties adjacent to or in counties through which the Northern Pacific passes. The northern tier of counties has no railroad lands while in some of the counties listed above these lands comprise ⅛ of the total area. The lands still owned by the Northern Pacific are considerably below average in quality.[6] Apparently

[4] Donaldson, Thos., *The Public Domain* (Washington: Government Printing Office, 1884), p. 915.

[5] Custer, Dawson, Fallon, Garfield, McCone, Prairie, Richland, Rosebud, Treasure, and Wibaux.

[6] The soils analysis of 12 counties referred to shows that more than ¾ of the total railroad lands in these counties are grazing lands, while only slightly more than ⅓ the total land area of these counties falls in this class. Using the prices indicated below for the different grades of land, the value of all railroad farm land in these counties averaged $3.45 per acre compared with an average of $5.21 per acre for all farm land, or about 34% below average in quality. Railroad grazing lands averaged $1.59 per acre compared with an average of $1.80 for all grazing land in these counties, or 12% below average in quality. Values of each grade

(*Footnote 6 continued on page 38*)

the best lands of the railroad grant were sold first. The alternate sections granted railroads make a distinct checkerboard effect in some areas where few sales have been made and they complicate the problem of blocking out economical range and farming units.

Nearly 3,000,000 acres or 3.1% of the land area of Montana is owned by investment and mortgage companies which bought up large tracts for resale to individuals or which loaned money on the lands and later obtained title through foreclosure. An analysis covering 44 of the 56 counties of the State shows 91 such companies own lands scattered over these counties. Fifteen of these 91 companies own land in at least 10 of these counties, the Twin City Land Company and Wells-Dickey Company owning land in 26 and 23 of the 44 counties, respectively. Holdings of investment and mortgage companies vary from no acreage in some counties to 20% of the total in Missoula County. Holdings are most numerous in the extreme eastern counties and the counties directly east of and parallel to the mountain ranges in the western third of the State.

Commercial banks own 1,185,000 acres or about 1.3% of all land in the State. These lands were acquired through foreclosure of loans made by the banks for investment purposes. Holdings vary from less than 1/10 of 1% in some counties to more than 4% in others. Commercial banks hold an unusually heavy proportion of third- and fourth-grade farming and third-grade grazing land, but considerably less than average proportion of first-grade or of fourth- and fifth-grade grazing land.[7] Since commercial banks become owners of land primarily through foreclosure, these data indicate that they have perhaps overrated the poorer grades of farming land compared with the best grades in making their loans, and that their appraisals and loans on grazing lands have either been unusually numerous on the third or middle grade, or that they have been too high. Since banks as well as most other agencies have not been able to sell very large acreages of land in recent years regardless of grade, the relative holdings in each grade are probably indicative of the quality of land foreclosed most frequently.

More than 740,000 acres or 8/10 of 1% of the land area of Montana is owned by insurance companies. These lands were acquired through foreclosure of loans made by the companies for investment purposes. An analysis of 45 of the 56 counties shows 37 life insurance and 10 fire insurance companies own lands scattered over these counties, the Union Central Life Insurance Company and the Millers National Insurance Company owning land in 26 and 19 of the 45 counties, respectively. Insurance companies own no land in seven counties of the State while in

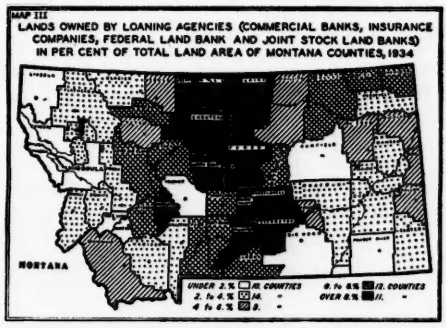
(*Footnote 6 continued from page 37*)
of land used for computing acre values are as follows: Farming land—1st grade, $10.00; 2nd grade, $7.00; 3rd grade, $5.00; 4th grade, $3.00. Grazing land—1st grade, $3.00; 2nd grade, $2.50; 3rd grade, $2.00; 4th grade, $1.50; and 5th grade, $1.00. Miscellaneous (bottom lands, swamps, mountains, and forests), $1.00. These prices, with the exception of the two highest grades of farming land which were not purchased, approximate those established for land in Montana by the Land Policy Section of the AAA in its Submarginal Land Purchase Program. (For the meaning of these grades see footnote 7 below.)

[7] The Montana Experiment Station has classified Montana farm lands into four grades based on wheat yields, and grazing lands into five grades according to grass cover or live-stock-carrying capacity based on the number of acres required for a 1,000 pound steer for a 10 months' grazing period. These grades are as follows: Farm land—1st grade, 22 or more bushels of wheat per acre; 2nd grade, 18-21 bu.; 3rd grade, 13-18 bu.; 4th grade, 9-12 bu. Grazing land—1st grade, 18 acres or less per animal; 2nd grade, 19-27 acres; 3rd grade, 28-37 acres; 4th grade, 38-55 acres; and 5th grade, 55 acres or more.

three others their holdings amount to more than 4% of the total. Insurance company holdings of the poorest grades of farming land (third and fourth grades) are heavier than the average as are also their holdings of the best grades (first and second) of grazing land. Their holdings of the poorest grades of grazing land (fourth and fifth) are less than the average. These data indicate that perhaps they appraised the poorer farm lands and the best grades of grazing land too high—at least they have foreclosed more of these lands than others. The extremely small holdings of fifth or poorest grade grazing lands indicate that perhaps very few loans were made on such lands, or that these loans have been more conservative than the average.

The Federal Land Bank of Spokane owns practically the same acreage (736,000) in Montana as insurance companies. These lands were also acquired through foreclosure. An additional 69,000 acres are owned by joint stock land banks. Holdings of the Federal Land Bank occur in every county but one, and in two counties they amount to more than 4% of the total area. An analysis of the quality of Federal Land Bank lands shows that this agency owns a very heavy share of the poorest (fourth) grade farming land—proportionately more than twice the average holdings of this grade by all agencies—but a very small share of the poorest (fifth grade) grazing land. Apparently this agency has followed much the same loan policy as insurance companies and has perhaps appraised the poorer farm lands too high, but been quite conservative in its loans on the poorest grazing lands.

A total of 2,730,000 acres or about 3% of the total area of the State and 5.2% of the total private land area is owned by the four lending agencies (commercial banks, insurance companies, Federal Land Bank, and joint stock land banks).[8] Their holdings seem to be heaviest in a belt extending from the northern counties of Liberty, Hill, and Blaine, south through the middle of the State to the Wyoming line (Map III).


MAP III
LANDS OWNED BY LOANING AGENCIES (COMMERCIAL BANKS, INSURANCE COMPANIES, FEDERAL LAND BANK AND JOINT STOCK LAND BANKS) IN PER CENT OF TOTAL LAND AREA OF MONTANA COUNTIES, 1934
MONTANA

These lands were obtained through foreclosure and will probably be sold at the first opportunity since these agencies are interested in land primarily as a loaning medium. This makes for instability in leasing and using these lands and presents serious farm-management and land-use difficulties.

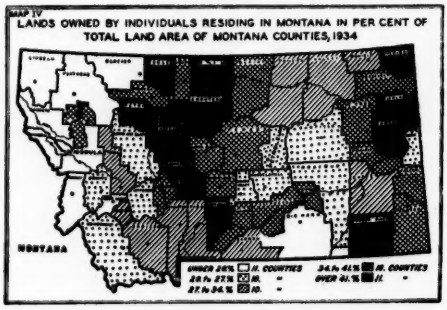
Miscellaneous corporations, including mining and lumber companies, live stock and sheep companies, sugar and packing companies, and dude ranches, own 2,549,000 acres, or 2.8% of the land area of the State. The Anaconda Copper Mining Company is the largest single holder of mining and timber lands. Operating live stock and sheep companies are scattered rather generally over the State except in the northeastern part which is used mostly for grain production. More than 60 dude ranches are concentrated largely in the western

[8] The holdings of land investment and mortgage companies are omitted here because many of these holdings comprise lands bought up for resale and were not obtained through foreclosure.

third of the State where the best recreational facilities are to be found.

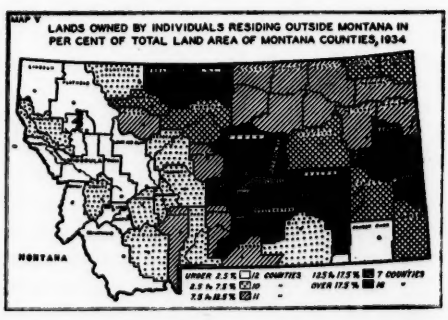
Ownership by Private Individuals

The remaining 42% (nearly 39,000,000 acres) of the land area of Montana is owned by private individuals. Individuals living within the State own 28,518,000 acres or about 31% of the total land area, and individuals living outside the State own 10,098,000 acres or almost 11% of the total. Resident holdings vary between counties from less than 7 to 56% of the total (Map IV),



while those of non-residents vary from less than 1 to 34%. Non-resident ownership is concentrated principally in the central, north central, and extreme east central counties (Map V). Speculation, abandonment, and foreclosure largely explain the concentration of non-resident ownership in these areas. Where oil has been discovered on nearby areas, individuals in other states have bought up parcels for speculative purposes. In the eastern counties, many have abandoned their land and moved to other states but still hold legal title to the land. Foreclosure of mortgages held by individuals residing in other states also helps to account for the heavy non-resident ownership in the eastern counties, where loans by individuals were particularly heavy.

Resident holdings of the best grades of farm land are above the average, while their holdings of the poorest grades are below. In the case of grazing lands resident holdings of the top two grades are heavier than average but considerably below average in the last three grades. This is what would naturally be expected because individuals who still have their lands and are still farming or ranching, having weathered tax delinquency and mortgage foreclosure, other things being equal, are those with the better grades of land. Non-residents have a smaller proportion of their holdings in the best grades of farm land than the average of all agencies, and a considerably heavier proportion of the poorest grades. They also have a larger than average proportion of the middle grades of grazing lands. Apparently, non-residents have speculated more in the poorer grades of farming land and in the medium grades of grazing land than in the other grades. This is logical since the lower or medium priced lands would appeal more to those who were speculating in land value than would the highest priced lands. Moreover, much of the better grades were taken up earlier by big cattle outfits and settlers.


MAP V
LANDS OWNED BY INDIVIDUALS RESIDING OUTSIDE MONTANA IN PER CENT OF TOTAL LAND AREA OF MONTANA COUNTIES, 1934
MONTANA

The holdings of all the above public and corporate agencies, excluding holdings of operating live stock and sheep companies included in corporation lands, plus holdings of non-resident individuals

constitute absentee ownership. In other words, less than ⅓ of the total area of Montana is owned by those living on or operating the land. Even when national forests, Indian reservations, and national parks are excluded, less than 45% of the remaining land area is owned by residents. This high degree of absentee landlordism gives rise to serious social and economic problems.

This absentee ownership is only a part of the picture, however. These holdings are broken up into a myriad of separate properties scattered over the state in shotgun fashion. In some counties there are more than seven times as many different holdings or tracts of agricultural lands as there are farm units. There are only 50,564 farm units in Montana according to the last Census figures available, but there are about 182,000 different holdings or ownerships of agricultural lands in the State, indicating the extent to which Montana lands have been split up by homesteaders, investors, and speculators. This division of the lands into numerous ownership tracts makes it difficult to block out economical units for farming or ranching, and is one of the principal causes of existing land-use maladjustments.

Recent Changes in Ownership

Ownership data were secured for 1925 and 1930 for 23 of the 56 counties of the State, and by a system of weighting the figures for these 23 counties by the acreage in their respective crop reporting districts, estimates were made of the entire State acreage owned by each agency. Such data indicate that significant changes in the ownership of Montana lands have occurred in the past 10 years. These changes have been in the direction of increased absentee ownership, the holdings of individuals residing within the State having declined from 33.5% of the total in 1925 to 32.7% in 1930, and to 30.8% in 1934. The proportion of the total land area owned by corporations increased from 12.1% in 1925 to 14.3% in 1934, and that owned by non-resident individuals from 10.0% in 1925 to 10.9% in 1934.

Table I summarizes the ownership changes in Montana between 1925 and 1934. The enormous increase in county owned lands is, of course, the outstanding feature of this table.

Causes of Recent Changes

The factors causing changes in ownership may be grouped into two classes: (1) the immediate causes, and (2) the more indirect or fundamental causes. Since the three largest percentage changes in ownership from 1925 to 1934 occurred in county lands, Federal Land Bank holdings, and insurance company lands, it is apparent that tax delinquency and mortgage foreclosure are the two principal immediate causes.

Increased county ownership of land is a direct result of continued tax delinquency and the consequent taking of tax deed by the counties. But it is also indicative of the existence of fundamental maladjustments, which in relatively good times may be wholly or partially obscured. Mortgage foreclosures are also indicative of fundamental maladjustments. An analysis of real estate transfers in 18 Montana counties shows that tax deeds accounted for 139,801 acres (11.8%) of the total acreage transferred in 1932, and that mortgage foreclosures accounted for 239,309 acres (20.1%). In other words, about ⅓ of the land changing hands in that year was transferred because of tax deed or mortgage foreclosure.

While tax deeds and mortgage foreclosures have been more numerous in

TABLE I. PERCENTAGE CHANGES IN OWNERSHIP OF MONTANA LANDS, 1925-1934

Type of Ownership	Acreage Owned						Per Cent Change 1925-1934
	1925		1930		1934		
	Amount (000's Omitted)	Per Cent	Amount (000's Omitted)	Per Cent	Amount (000's Omitted)	Per Cent	
Public Agencies:							
Federal Government	35,788	38.59%	33,579	36.21%	33,048	35.64%	−7.6%
State of Montana	5,307	5.72	5,361	5.78	5,257	5.67	−1.0
County governments	52	.06	1,211	1.30	2,526	2.72	+4731.2
Miscellaneous public agencies	45	.05	62	.07	63	.07	+42.0
Total	41,192	44.42	40,213	43.36	40,894	44.10	−0.7
Corporate Groups:							
Railroads	5,446	5.87	5,069	5.47	5,078	5.48	−6.8
Land investment and mortgage companies	2,361	2.55	3,072	3.31	2,869	3.09	+21.5
Commercial banks	1,103	1.19	1,194	1.29	1,185	1.28	+7.4
Insurance companies	407	.44	617	.67	740	.80	+82.1
Federal Land Bank	120	.13	481	.52	736	.79	+515.8
Joint Stock Land Banks	39	.04	92	.10	69	.07	+77.5
Miscellaneous corporations	1,702	1.83	2,090	2.25	2,549	2.75	+49.8
Total	11,178	12.05	12,615	13.61	13,226	14.26	+18.3
Individuals:							
Residents of Montana	31,099	33.54	30,335	32.71	28,518	30.75	−8.3
Non-residents of Montana	9,267	9.99	9,573	10.32	10,098	10.89	+9.0
Total	40,366	43.53	39,908	43.03	38,616	41.64	−4.3

the drouth and depression years 1929-1933, they occurred, nevertheless, in rather heavy numbers prior to these years, indicating that fundamental maladjustments existed. Principal of these maladjustments are: (1) overspeculation in land, (2) overdevelopment of local government, and (3) improper utilization of land.

As a result of homesteaders taking up small holdings under the Homestead Acts, and western speculators and investors buying up Montana land in 40-acre, quarter-, or half-section units, small uneconomical units are scattered principally over the eastern ⅔ of the State. Such small farm parcels in a semi-arid region cannot support the tax and mortgage burdens placed upon them. Moreover, most cattlemen in order to get an economical unit have to lease from numerous owners residing all over the United States. This puts them in an uncertain position because they have no assurance from year to year that they can maintain their operating units intact, and consequently encourages severe overgrazing of the range.

Future Control of the Land

Correction of the above maladjustments depends to a large extent upon a grouping or blocking out of these small tracts into units of economical size controlled for maximum productivity. This blocking out is being accomplished in four principal ways, each of which will help to change considerably the land ownership pattern in Montana. The first of these is the consolidation of farms by the more successful farmers taking over lands abandoned by their less successful neighbors. The number of farms in the State decreased from 57,677 in 1920 to 47,495 in 1930 (a drop of 17.7%), while the average acreage of crop land per farm increased from 152 acres in 1920 to 240 in 1930, a rise of

58.0%. Preliminary 1935 figures, however, indicate an increase of about 3,000 farms since 1930, attributable principally to the countryward movement from the cities during the depression.

The second method is the voluntary grouping together of ranches to form cooperative grazing districts and thus acquire effective control of a given area. To date 92 cooperative grazing associations in 14 counties of the State have been incorporated. Only a few of these are actively operating at present, but the number is an indication of the keen interest in the problem of effectively controlling use of the range.

The third method is the establishment of Taylor grazing districts and their administration by the Department of the Interior. Considerable blocking out of rather large areas for economical administration may occur through the exchanging of privately owned lands in certain areas for isolated or scattered public domain land elsewhere. This will be practicable only in areas where federal lands comprise a fairly large proportion of the total land area of the district, probably 20% or more. In some Montana counties where land adjustment problems are acute, present federal lands comprise less than 4% of the total.

The fourth method is the outright purchase by the Federal Government of most of the numerous small privately owned tracts in selected areas. Three projects covering 12 counties in the State have been set up under the submarginal land purchase program. Just what the new pattern of ownership will be cannot be determined at this early date, but one thing is certain: the adjustments which must be made, and which are being made by one or all the above methods, point to a more simplified use and control pattern with fewer ownership tracts and fewer undersized, inefficient operating units.

The Record of Long-Term Real Estate Securities

By ERNEST A. JOHNSON*

THE plight of holders of real estate securities has been the subject of much discussion in recent months. Defaults, reduction of interest rates, extension of maturities, or other failures seem to be the typical fate of these securities. Reorganization proceedings have occasioned so much protest that a Congressional committee under the chairmanship of Adolph J. Sabath was appointed to investigate the current practices and to recommend suitable legislation to protect investors in the future. Valuable as such an investigation may be, its scope is limited. It must devote its attention primarily to reorganizations which have occasioned protest and can only incidentally examine cases where no objection has been voiced. Presumably, it will not examine issues where the terms of the original agreement have been met. A broader inquiry which includes both the successful and unsuccessful issues is necessary to determine the record of real estate securities. Such an examination is the objective of this study.

The securities examined are long-term issues with a maturity of more than five years. Their importance is evident from the fact that over four billion dollars of these securities were sold between 1919 and 1934 (Table I). These offerings include leaseholds, collateral trusts, junior liens of various descriptions, as well as first mortgage bonds. Beginning with $57.7 million in 1919, the flotations climbed to nearly $700 million in 1925 and were about $50 million less in 1926. Offerings were considerably over half a billion dollars in 1927 and reached $683.7 million in the following year. In 1925, 1926, and 1928 real estate flotations exceeded those for railroads. During the period 1919-1934 real estate issues amounted to 55.8% of railroad and 31.6% of public utility issues.

Lack of complete data on the smaller issues makes it necessary to confine this investigation to issues of a million dollars or over which account for about 70% of the total.[1] It was necessary to exclude 134 issues totaling $213.8 million, or 7.3% of the issues amounting to a million dollars or over, because complete information was not available. The reporting services dropped some because of lack of interest in the securities and gave no recent information on others. On some securities no bids were available for the month for which market

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[1] Except for 1919, the names of the securities were obtained from the monthly summaries of capital flotations in the *Commercial and Financial Chronicle*. The issues of 1919 were obtained from Poor's *Manual* because the *Chronicle* did not begin to list the securities until the following year. The study concludes with issues of 1931 because after that date flotations of securities in the group studied ceased. Issues on foreign properties and railroad terminals were excluded. Bonds sold directly to insurance companies were eliminated because subsequent information on these issues is seldom available in published reports. Such issues were quite prominent in the later years covered by this study. A few securities, including some land trust certificates listed in the real estate mortgage bond sections of Moody's *Banks and Finance Manual*, but not in the *Chronicle*, were added. The present status of the issues was obtained principally from Moody's. Since the *Manual* covering real estate securities, published in May, presumably covers information through April, the latter month was used in estimating market value of the securities.

values have been computed. In some instances receivers in charge of the properties have refused to give information requested. This left as a basis for this study, 1,090 issues totaling $2,684.0 million.

The results of this examination, summarized in Table II, show that slightly more than ⅛ of the issues have been called, ⅛ have been paid at maturity, about ⅛ are outstanding and have met the required payments, and slightly less than ⅝ are outstanding and have failed in some degree to meet the contract terms. The called issues amount to $364.1 million, or 13.6% of the total. Roughly ⅔ of the flotations of 1919 and 1920, ½ those of 1921, and 60% of those of 1922 were thus retired. The coupon rates in these years were high, and substantial savings in interest payments were possible because of the easier credit conditions prevailing in later years. After 1922 the percentage of issues called declined consistently until it reached 2.3% in 1928. Issues of subsequent years have not been called because of the disorganization of the market. The call price of issues of earlier years was commonly 102, but frequently higher rates were found. The exact amount realized by holders of these securities called cannot be stated because the amount outstanding at time of call was not always available.

Serial maturities, purchase of bonds for sinking funds, and payment of some issues at final maturity date total $336.8 million, or 12.5% of the total. Since about ¼ of the securities examined were scheduled to mature within 10 years of date of offering and ⅔ within 15 years, a large percentage of the earlier issues and a progressively smaller proportion of the later ones should have been matured. Actually, the percentage figures show little if any such tendency because a large part of the issues of the first few years have been called and many of the remaining issues failed to meet the scheduled serial payments.

There remain $1,983.1 outstanding

TABLE I. LONG-TERM REAL ESTATE ISSUES OFFERED, 1919-1934, COMPARED WITH RAILROAD, PUBLIC UTILITY, AND TOTAL CORPORATE ISSUES.*
(Amounts in millions of dollars)

Year of Offering	Real Estate	Percent of Total	Railroad	Percent of Total	Public Utility	Percent of Total	All Corporate Issues†
1919.....	$ 57.7	9.1%	$ 135.0	21.3%	$ 173.8	27.4%	$ 633.7
1920.....	68.3	5.5	356.4	28.9	218.0	17.7	1,234.4
1921.....	45.1	2.4	638.8	33.7	473.2	25.0	1,896.2
1922.....	160.1	6.9	589.2	25.6	632.4	27.4	2,304.3
1923.....	239.3	10.3	471.8	20.4	812.2	35.1	2,316.4
1924.....	319.3	12.4	809.1	31.5	880.1	34.3	2,569.3
1925.....	695.8	22.9	473.6	15.6	1,027.1	33.8	3,040.2
1926.....	647.4	17.7	351.7	9.6	1,380.3	37.8	3,648.0
1927.....	573.3	11.0	767.5	14.8	1,997.0	38.5	5,189.9
1928.....	683.7	17.5	505.7	12.9	1,518.7	38.8	3,911.3
1929.....	333.9	11.7	581.2	20.4	918.1	32.3	2,842.3
1930.....	171.1	5.3	946.0	29.1	1,460.9	45.0	3,248.0
1931.....	114.9	6.2	468.4	25.4	1,012.5	55.0	1,840.8
1932.....	3.7	.9	11.1	2.7	385.0	94.9	405.8
1933.....	.9	.6	92.6	66.9	43.2	31.2	138.5
1934.....	.4	.1	178.3	62.1	82.9	28.9	287.0
Total.....	$4,114.9	11.6%	$7,376.4	20.8%	$13,015.4	36.7%	$35,506.1

*Sources: 128 *Commercial and Financial Chronicle* 316-317 (1929); 138 *Ibid.* 211 (1934); 140 *Ibid.* 22 (1935).
†Includes industrial, investment trust, shipping and miscellaneous offerings in addition to issues shown.

TABLE II. SUMMARY OF LONG-TERM REAL ESTATE ISSUES AMOUNTING TO ONE MILLION DOLLARS OR OVER OFFERED, 1919-1931.
(Amounts in millions of dollars)

Year of Offering	Total Issues		Securities Retired				Securities Outstanding			
			Called		Matured		Meeting Contract		Not Meeting Contract	
	Number	Amount	Amount	Percent Total	Amount	Percent Total	Amount	Percent Total	Amount	Percent Total
1919.....	13	$ 31.2	$ 20.8	66.7%	$ 4.5	14.4%	$ 5.3	17.0%	$ .6	1.9%
1920.....	19	48.2	32.1	66.5	6.1	12.7	.....	.....	10.0	20.8
1921.....	13	24.2	11.9	49.2	4.6	19.0	.5	2.0	7.2	29.8
1922.....	62	137.8	82.5	59.9	12.4	9.0	4.8	3.5	38.1	27.6
1923.....	67	165.4	63.4	38.3	19.4	11.7	13.4	8.1	69.2	41.8
1924.....	96	197.7	45.5	23.0	32.9	16.6	18.7	9.5	100.6	50.9
1925.....	178	483.6	65.1	13.5	85.7	17.7	51.0	10.5	281.8	58.3
1926.....	177	431.3	18.0	4.2	56.7	13.1	63.2	14.7	293.4	68.0
1927.....	163	379.2	12.8	3.4	43.8	11.6	49.0	12.9	273.6	72.1
1928.....	209	519.0	12.0	2.3	46.8	9.0	60.7	11.7	399.5	77.0
1929.....	62	176.3	.....	.....	14.3	8.1	28.6	16.2	133.4	75.7
1930.....	23	77.2	.....	.....	7.8	10.1	25.1	32.5	44.3	57.4
1931.....	8	12.9	.....	.....	1.8	13.9	7.6	59.0	3.5	27.1
Total....	1,090	$2,684.0	$364.1	13.6%	$336.8	12.5%	$327.9	12.2%	$1,655.2	61.7%

securities, or 73.9% of the total. Of this amount, $327.9 million, or 12.2% of the total, have no reported failures. Considerable improvement is evident after 1928, with the issues of 1931 showing the best record, but the percentage figures are generally low. On the remaining $1,655.2 million, or 61.7% of the total, the borrower has not met the terms of the original agreement. Such failures involve reduction in interest rates, extension of maturities, omission of purchases of bonds for sinking funds, as well as defaults in interest and principal payments. Generally, defaults of interest or serial payments have occurred, since only rarely would security holders otherwise consent to a reduction in the coupon rate or to an extension of maturities. Except for the issues of 1922, the percentage figures rose through 1928, after which a decline set in.

Although the record showing the degree to which contract terms have been adhered to is important, it does not tell the whole story. It is also important to determine how much the holders of these securities could realize in the market. This information is summarized in Table III, which gives the bid prices that prevailed during April, 1935.[2] It should be borne in mind that the market for real estate securities was never very well organized. Much of this organization was swept away during the worst of the depression. Distress sales were very common with the result that values were unduly depressed. While some semblance of order has been restored, it is evident that the market has by no means fully recovered.

[2] *The Real Estate Bond Service* and the *National Corporation Bond Summary* were the sources of the bids. Where the original securities have been converted and quotations on them were no longer available, bids on the new issues were used. Generally, the old securities were quoted even though the reorganization was practically complete. Usually, only one bid price was available. Where there was a range of bids, the lowest was chosen in the interests of conservatism.

TABLE III. MARKET VALUE OF OUTSTANDING REAL ESTATE SECURITIES DURING APRIL, 1935, COMPARED TO FACE VALUE.
(Amounts in millions of dollars)

Year of Offering	Issues Meeting Contract			Issues not Meeting Contract		
	Face Value	Market Value	Percent of Market to Face Value	Face Value	Market Value	Percent of Market to Face Value
1919.....	$ 5.3	$ 5.3	100.0%	$ .6	$ .03	5.0%
1920.....				10.0	1.0	10.0
1921.....	.5	.3	60.0	7.2	1.8	25.0
1922.....	4.8	4.5	93.8	38.1	7.7	20.2
1923.....	13.4	10.4	77.5	69.2	18.9	27.4
1924.....	18.7	13.9	74.3	100.6	24.6	24.5
1925.....	51.0	36.8	72.2	281.8	66.0	23.4
1926.....	63.2	44.2	69.9	293.4	77.4	26.4
1927.....	49.0	35.3	72.0	273.6	62.6	22.9
1928.....	60.7	39.6	65.2	399.5	96.7	24.2
1929.....	28.6	24.8	86.7	133.4	37.6	28.2
1930.....	25.1	15.3	60.9	44.3	12.3	27.8
1931.....	7.6	7.0	92.1	3.5	1.2	34.3
Total.....	$327.9	$237.4	72.4%	$1,655.2	$407.8	24.6%

Where failures to meet contract terms are not involved, holders could realize 72.4 cents on the dollar. For the securities offered after 1921, the lowest point is 60.9 cents for the issues of 1930 and the highest, 93.8 cents, for those offered in 1922. With the exception of 1927, the trend is downward until the issues of 1928 are reached, after which a recovery appears. The low prices on some issues indicate that default is probable in the near future. In some cases, earnings are barely sufficient to cover interest requirements; in others, prospective termination of favorable leases makes it doubtful whether sufficient earnings will be available to meet the scheduled payments. It is possible that in a few cases the reporting services have failed to report lapses in payments. The holders of securities which were involved in failures could realize roughly 25 cents on the dollar. For the securities issued in the 10 years, 1921-1930 inclusive, the rate has fluctuated from 20 to 28 cents.

In order to give a more comprehensive picture of the situation as a whole, the results of this investigation are summarized in Table IV. The bid values of outstanding securities have been added to the amounts realized by call and payment at maturity to give the total recoverable value on the yearly offerings. The percentage which this latter value bears to the total face value of the securities is also shown. These

TABLE IV. TOTAL RECOVERABLE VALUE (CALLS, MATURED, PLUS MARKET VALUE OF OUTSTANDING SECURITIES) OF REAL ESTATE SECURITIES COMPARED TO TOTAL FACE VALUE
(Amounts in Millions of Dollars)

Year of Offering	Number of Issues	Amount	Total Recoverable Value	Percentage of Recoverable to Face Value
1919....	13	$ 31.2	$ 30.6	98.1%
1920....	19	48.2	39.2	81.3
1921....	13	24.2	18.6	76.9
1922....	62	137.8	107.1	77.7
1923....	67	165.4	112.1	67.8
1924....	96	197.7	116.9	59.1
1925....	178	483.6	253.6	52.4
1926....	177	431.3	196.3	45.5
1927....	163	379.2	154.5	40.7
1928....	209	519.0	195.1	37.6
1929....	62	176.3	76.7	43.5
1930....	23	77.2	35.4	45.9
1931....	8	12.9	10.0	77.5
Total...	1,090	$2,684.0	$1,346.1	50.2%

figures do not take into consideration losses attributable to lapses of interest or reduction in coupon rates. Complete information on such losses would be difficult to obtain and any method of computation would be the subject of controversy. The scope of the inquiry is limited to an estimate of what holders would realize on the assumption that they bought at time of issue and held the securities until April, 1935.

The fortunate holders of securities offered in 1919 realized practically 100 cents on the dollar, but buyers of securities issued in subsequent years suffered considerably. Except for 1922, the recoverable value declined consistently year by year until it reached a low of 37.6 cents per dollar for the issues of 1928. Thereafter a pronounced recovery has occurred but the number of issues in the last few years has been so small that few definite conclusions can be drawn. On the entire 1,090 issues investors could have realized about 50 cents on the dollar.

The Public Utility Holding Company Act of 1935

By E. D. OSTRANDER*

THE Public Utility Act of 1935[1] is in effect two separate acts. Title I of the Act is cited as the "Public Utility Holding Company Act of 1935" and is applicable, generally speaking, to holding companies in the electric and gas utility fields. Title II of the Act is cited as the "Federal Power Act" and applies to companies owning or operating facilities for the transmission of electrical energy, or for the sale thereof at wholesale, in interstate commerce, and, of course, to licensees under the Act. Title II amends the original Federal Water Power Act[2] and provides the new citation of "Federal Power Act." It may also be pointed out that, as finally passed, the Public Utility Act of 1935 does not contain Title III, which was in early drafts of the bill. Title III would have provided federal regulation of interstate natural gas utilities, but this portion of the bill was lost in the shuffle.

Inasmuch as the two titles of the Act are of such separable nature, the present study will be concerned only with Title I, the holding company portion of the law. This is the section which has occasioned by far the greater interest and controversy. In fact, as this is being written, the holding company law is the subject of a bitter legal battle[3] which will undoubtedly reach the United States Supreme Court. Because of the interest in Title I and the controversy with respect thereto and because of the complexities of the law, summarization seems desirable. Interpretation, on the other hand, is hardly possible nor feasible in view of the complex and uncertain status of the Act and the limited experience of operation to date.

It must be noted at the outset that the new Public Utility Holding Company Act of 1935 is wordy and complicated, and that it is very sweeping in its delegation of power to the Securities and Exchange Commission (SEC). These facts make summarization difficult and somewhat hazardous; but for the sake of brevity and conciseness, the summary which follows attempts (1) to point out the general principles and scope of the Act, and (2) to review briefly the major items which will come under federal jurisdiction.

Part I, the general summary, will be centered around the following points: (1) the aims and purposes of the Act; (2) the scope of the Act; (3) the prohibitions created; and (4) the modus operandi of the regulatory process. Part II, the more detailed study, will review

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Editorial Note. In place of a general article on federal utility legislation in the depression, as previously scheduled, this separate discussion of the holding company act is presented here. This was considered advisable because of the keen current interest in this particular enactment and the frequent lack of a clear understanding of its nature and scope. Other parts of the recent federal legislation may also be treated separately, if that policy seems desirable.

While not technically a part of this series of articles on legislation, the reader's attention is called to the article on "The Power Program of the Tennessee Valley Authority" which appears elsewhere in this issue and analyzes the recent amendments to the T.V.A. Act.

[1] Public, No. 333, 74th Congress (S. 2796), approved August 26, 1935.

[2] Public, No. 280, 66th Congress (H.R. 3184), 41 Stat. L. 1063.

[3] *Re American States Public Service Company* (U.S. Dist. Ct., D. Md.),—F. Supp.—; 10 P.U.R. (N.S.) 413, decided Nov. 7, 1935, on appeal to the Circuit Court of Appeals, Maryland, Fourth Circuit.

the so-called "death sentence," the control of security issues, contracts, and similar details.

I. General Summary

Aims and Purposes of the Act

The new holding company law declares that public utility holding companies[4] and their subsidiaries[5] are affected with a national public interest in that: (1) their securities are sold and distributed, contracts are made and performed, and subsidiaries sell and transport gas and electricity by use of the mails and other means and instrumentalities of interstate commerce; (2) the interstate commerce of subsidiary operating companies is affected by holding company practices; and (3) holding company practices are not susceptible of effective state regulation and such practices in turn make difficult, if not impossible, effective state regulation of operating companies (§1(a)).

It is further declared that the national public interest and the interests of investors and consumers may be adversely affected by the lack of adequate information, the lack of adequate control over contracts and services, the barriers to effective state regulation as a result of holding company control, lack of economy, and similar abuses (§1(b)). Further, when such abuses continue and become widespread, federal regulation becomes necessary. Hence, the Act contemplates meeting the problems and eliminating the evils arising from holding company practices. The method by which this policy is to be carried out will be to compel simplification and elimination of holding company structures, together with regulatory measures (§1(c)).

The Scope of the Act

A. Companies Affected. The Act applies to holding companies and their subsidiaries, to affiliates[6] of the fore-

[4] "Holding Company" means: (a) any company which has, directly or indirectly, 10% or more voting control of a public utility company or of another holding company; and (b) any person found by SEC to exercise (either alone or in combination with others pursuant to any agreement, etc.) such a controlling influence over a public utility or over a holding company as to make it necessary in the interest of public, investors, or consumers that such person be made subject to the Act (§2(a) (7)).

It is provided, however, that SEC shall, upon application, declare a company not a holding company under (a) above if it finds that the company (i) does not in any manner control a public utility or holding company, (ii) is not an intermediary company through which such control is exercised, and (iii) does not in any manner exercise such a controlling influence over the management and policies of a public utility company or holding company as to make it necessary in the interest of public, investors, or consumers that such person be subject to the Act. With respect to such exclusion orders SEC may (1) require the filing of periodic applications for renewal, (2) condition the order, and (3) modify or revoke the order for cause (§2 (a)(7)).

[5] "Subsidiary Company" of a specified holding company means (a) any company 10% or more of whose voting securities are held, directly or indirectly, by such holding company or by a subsidiary of such holding company; and (b) any person whose management or policies are subject to such a controlling influence by a holding company or companies, either alone or in combination, as to make it necessary in the interest of public, investors, or consumers that such person be subject to provisions of the Act which relate to subsidiaries (§2(a)(8)).

Here, again, SEC is granted power to make exclusions in that SEC, upon application, shall declare a company not a subsidiary under (a) above if it finds (i) such company is not controlled in any manner by a holding company, (ii) is not an intermediary company through which such control is exercised, and (iii) its management and policies are not subject to a controlling influence by any holding company or companies so as to make it necessary that it be subject to the Act. As in the case of a holding company, SEC retains jurisdiction in that it may require periodic applications for a renewal of an exclusion and may condition, modify, or revoke its exemption order (§2(a)(8)).

It therefore follows from the definitions that in order to be a holding company, a company must have as a subsidiary one or more electric or gas utilities; but, on the other hand, any company, whether it be an electric, gas, water, telephone, industrial, financial, or other company, may be a subsidiary if it stands in a subsidiary relation to a company that is a holding company within the definition of that term.

[6] "Affiliate" of a specified company means (a) any person owning, controlling, or holding, directly or indirectly, with power to vote 5% or more of the out-

(*Footnote 6 continued on page 51*)

going, to mutual service companies,[7] and to persons whose principal business is the performance of service, sales, or construction contracts with such holding companies or with their public utility subsidiaries.

B. Transactions Affected. The list below covers in broad terms the principal activities which will be subjected to control and regulation by the Securities and Exchange Commission, the agency that is to administer the Act. The following list does not include activities which are expressly prohibited; these are listed separately in the next section.

1. Issuance and sale of long-term securities, the alteration of priorities, voting powers, and similar rights of outstanding securities
2. Short-term borrowing aggregating more than 5% of the principal amount and par value of outstanding securities
3. Acquisition of sale of securities or utility assets[8]
4. Intercompany loans
5. Dividend payments
6. Retirement and redemption of securities
7. Solicitation of proxies, powers of attorney, etc.
8. Service, sales, and construction contracts
9. The holding company structure

C. Prohibitions Created. Through express statutory prohibition, the following are declared unlawful:

1. For a registered holding company or any subsidiary company thereof to sell or offer to sell from house to house any security of such holding company (§6(c)(1)).
2. For a registered holding company or subsidiary company thereof to cause any officers or employees of any of the subsidiaries of such holding company to sell securities of the holding company (§6(c)(2)).
3. When a state law prohibits or requires approval of the ownership by a single company of the assets of an electric utility[9] and a gas utility[10] serving substantially the same territory, for a registered holding company or any subsidiary thereof to acquire an interest in an electric utility and a

(Footnote 6 continued from page 50)
standing voting securities of such specified company; (b) any company 5% or more of whose outstanding voting securities are owned, controlled, or held, directly or indirectly, with power to vote, by such specified company; (c) any officer or director of such specified company, or of any company which is an affiliate thereof under (a) above; and (d) any person or class of persons whom SEC finds to stand in such relation to such specified company that there is liable to be such an absence of arm's-length bargaining as to make it necessary in the public interest or for protection of investors or consumers that such person or class of persons be considered an affiliate (§2(a)(11)).

[7] "Mutual Service Company" means a company which is *approved as a mutual service* company under Section 13 (§2(a)(13)). Section 13 provides, among other things, that mutual service companies for the performance of sales, service, and construction contracts shall not be approved unless SEC finds such companies so organized as to render efficient and economical service at costs fairly and equitably allocated among the member companies and at a reasonable saving over costs if performed by independent persons.

[8] "Utility assets" means the facilities, in place, of any electric or gas utility (§2(a)(18)).

[9] "Electric Utility" means an operating electric utility; i.e., any company which owns or operates facilities used for the generation, transmission, or distribution of electric energy for sale, other than sale to tenants or employees of the operating company if such tenants and employees do not resell the energy. SEC, upon application, shall declare a company not an electric utility if it finds: (a) the company is primarily engaged in business other than that of an electric utility and the small amount of energy sold makes it unnecessary to subject such company to the Act; or (b) such company operates within a single state and substantially all its outstanding securities are owned directly or indirectly by another company which takes the energy for its own use and not for resale, provided further that the purchasing company be engaged primarily in manufacturing (other than the manufacture of electric energy or gas) and is not controlled by any other company, and provided further that the operating company furnish such a small amount of energy to others that regulation is not necessary (§2(a)(3)).

[10] "Gas Utility" means a natural or manufactured *retail* gas utility; i.e., any company which owns or operates facilities used for distribution at retail (except in portable containers or to tenants or employees for use and not for resale) natural or manufactured gas for heat, light, or power. SEC, upon application, shall declare a company not a gas utility if it finds: (a) such company is primarily engaged in one or more businesses other than the business of a gas utility, or (b) the small amount of gas distributed makes regulation unnecessary (§2(a)(4)).

Furthermore, it should be noted, that as used in the Act "public utility company" means only an electric utility or a gas utility (§2(a)(5)).

gas utility serving such a territory, or, if it already has such an interest, to acquire any interest in an additional electric or gas utility serving such territory, without express state commission approval (§8).

4. For a registered holding company to borrow or receive additional credit from any of its subsidiary companies (§12(a)).

5. For a registered holding company, or any of its subsidiaries, to make any contribution to a political party or candidate (§12(h)).

6. *After April 1, 1936*, for a registered holding company to enter into or perform any service, sales, or construction contract for any associate public utility company or mutual service company (§13(a)).

7. *After August 26, 1936*, for a registered holding company or any subsidiary thereof to have as an officer or director, any executive officer, partner or representative of a bank, trust company, investment banker, or banking association or firm, or of any corporation a majority of the voting stock of which is owned by any bank, trust company, investment banker, or banking association or firm, except as SEC may specifically permit by rule or regulation (§17(c)).

In addition to these express prohibitions, it is implied in Section 7(c) that holding companies cannot issue no par stocks, preference stocks, or debenture bonds.

The Modus Operandi of the Regulatory Process

A. In General. Three general methods are provided through which the regulatory process is to be carried out. The first of these is express statutory prohibition, as already noted. It will be the duty of SEC to police such provisions of the Act, and to make exemption in some instances by rule or regulation. The second method consists of the prohibition of certain acts without first obtaining the approval of SEC. The third method is the prohibition of certain acts in contravention of such rules, regulations, and orders as SEC is empowered to issue. From this analysis it may be seen that most of the provisions of the Act (except Section 11, the "death sentence," requiring simplification of holding company systems) are operative only when those subject to the Act propose to take some action for which SEC approval is required or only when SEC has taken affirmative action through the issuance of a rule, regulation, or order.

B. Registration of Holding Companies. The first step in the regulatory process is the registration of holding companies. Subsection (b) of Section 4 provides that every holding company which had outstanding on October 1, 1935 any security held by persons not resident in the state of organization must register on or before December 1, 1935, as provided in Section 5, if such security had been distributed or made the subject of a public offering at any time since January 1, 1925 by use of the mails or other instrumentality of interstate commerce. This provision is so broad that no important holding company can hope for exemption through operation of the January 1, 1925 date.

The process of registration as established in Section 5 may be summarized as follows:

1. On or after October 1, 1935, and not later than December 1, 1935, a holding company may register by filing with SEC a notification of registration in a form to be prescribed by SEC. A person shall be deemed to be registered upon receipt by SEC of such notification (§5(a)).

2. Thereafter and within such reasonable time as SEC may permit, a registration statement must be filed. This statement is to include a long list of items setting forth the financial structure, nature of business, security provisions, corporate records, etc. (§5(b)).

3. SEC may permit the filing of a preliminary registration statement which does not contain all the required data, but the complete registration statement must be filed within one year (§5(c)).

4. When the SEC finds, upon applica-

tion, that a registered holding company has ceased to be a holding company, it shall so declare by order and the registration shall cease to be in effect, upon such terms and conditions as the Commission finds and prescribes as necessary for protection of investors (§5(d)).

C. Power to Exempt. Section 3 of the Act gives SEC considerable leeway with respect to granting exemptions to companies. Holding companies and their subsidiaries as such are to be exempt, in so far as not detrimental to the interest of public, investors, or consumers, if, generally speaking, operations are confined to a single state in which all the companies are organized; or if the holding company is primarily an operating company confined to the state of organization; or if the holding company is engaged primarily in other businesses, etc.; or if the holding company is only temporarily a holding company; or if operations lie principally outside of the United States (§3(a)).

A subsidiary shall be exempt as such if it receives no material part of its income from within the United States and if its subsidiaries are not public utilities in the United States (§3(b)).

SEC is given the power, through rules and regulations, to exempt, conditionally or unconditionally, any specified class or classes of persons from the provisions relating to subsidiaries and affiliates, where such exemption is necessary or appropriate in the interest of public, investors, or consumers and is not contrary to the purposes of the Act (§3(d)).

These exemptions constitute one method whereby a person[11] may escape regulation under the Act. A second method consists of securing an order from SEC, upon application, excluding the applicant from the category of "holding company," "subsidiary company," "electric utility," or "gas utility." The terms and conditions whereby a company may obtain such exclusion are stated in the footnotes above defining these four terms.

II. Additional Details

Simplification of Holding Company Systems

Section 11, the celebrated "death sentence," provides first that SEC shall make an intensive examination of registered holding company systems and determine how such systems may be simplified, complexities eliminated, voting power equitably distributed, and how properties and business may be confined to those necessary or appropriate to the operations of an integrated public utility system (§11(a)).

In this connection it is necessary to study the definition of "an integrated public utility system." In the case of electric utilities, this term means

> "a system consisting of one or more units of generating plants and/or transmission lines and/or distributing facilities, whose utility assets, whether owned by one or more electric utility companies, are physically interconnected or capable of physical interconnection and which under normal conditions may be economically operated as a single interconnected and coordinated system confined in its operations to a single area or region, in one or more States, not so large as to impair (considering the state of the art and the area or region affected) the advantages of localized management, efficient operation, and the effectiveness of regulation" (§2(a)(29)(A)).

In the case of gas utilities, the term means

> "a system consisting of one or more gas utility companies which are so located and related that substantial economies may be effectuated by being operated as a single coordinated system confined in its operations to a single area or region, in one or more States, not so large as to impair (considering the state of the art and the area

[11] "Person" is defined broadly as an individual or a company (§2(a)(1)).

or region affected) the advantages of localized management, efficient operation, and the effectiveness of regulation: *Provided*, That gas utility companies deriving natural gas from a common source of supply may be deemed to be included in a single area or region" (§2(a)(29)(B)).

It probably is not a great stretch of the imagination to say that these definitions of an integrated public utility system carry implications of a long-range plan for coordination of electric properties and of gas properties into regional systems.

SEC's study of holding company systems will, of course, form the basis of orders which it shall issue after January 1, 1938 requiring simplification of such systems. After that date, SEC shall order each registered holding company and each subsidiary thereof to take such action as is necessary to limit the operations of the *holding company system* to *a single integrated public utility system* and to such other businesses as are reasonably incidental or economically necessary or appropriate to the operation of such an integrated system (§11(b)(1)).

It is provided, however, in the same section that a registered holding company may be permitted to control one or more additional integrated systems if SEC finds:

1. Each of such additional systems cannot be operated independently without loss of substantial economies which would be obtainable through retention of such holding company control;
2. All such additional systems are located in one state, or in adjoining states, or in contiguous foreign countries; and
3. The continued combination of such systems under one holding company is not so large (considering the state of the art and the area or region affected) as to impair the advantages of localized management, efficient operation, or the effectiveness of regulation.

The foregoing provisions relate to the control of operating properties and not to the pyramiding of holding company structures. With respect to the latter, it is provided that after January 1, 1938, SEC shall order each registered holding company and each subsidiary thereof to take such action as may be necessary in order that a holding company shall cease to be a holding company with respect to each subsidiary which itself has a subsidiary that is a holding company (§11(b)(2)). The pyramiding is thus limited to not over the second degree. In other words, the maximum structure would consist of (1) operating companies; (2) a holding company controlling those operating companies; and (3) a holding company over the first holding company.

The provisions of Section 11 thus far discussed set the maximum limits of complexity of structure. It is very important to note, however, that SEC is given power to require even further simplification. That is, Section 11 (b) (2) provides in part that it shall be the duty of SEC, as soon as practicable after January 1, 1938, to require that each registered holding company and each subsidiary thereof shall take such steps as SEC shall find necessary "*to ensure that the corporate structure or continued existence of any company in the holding system does not unduly or unnecessarily complicate the structure, or unfairly or inequitably distribute voting power among security holders of such holding company system.*" (Italics supplied.) Hence, this general clause gives SEC power to require simplification to any degree which SEC shall find necessary to ensure that there shall not be undue complications, etc. In other words, the minimum of complexity of structure rests with SEC's decisions on distribution of voting power and complexity of structure, whereas the maximum is prescribed by the Act.

An interesting question arises here as a result of the definition of an "integrated public utility system." That term is defined first as it applies to electric utilities and second as it applies to gas utilities. No express provision is made with respect to its applicability to a combination of electric and gas properties. In fact, the question may be raised whether a combination of gas and electric properties can be, by definition, an integrated public utility system. If it cannot, a holding company system limited to a single integrated public utility system could not control both gas and electric properties, except, of course, for the provision that a holding company may under certain conditions continue to control more than one integrated public utility system. Hence, one of the purposes of the exception may be to permit a holding company to control both gas and electric properties.

An order issued by SEC under Section 11 requiring simplification must be complied with within one year except that one additional year's time may be granted upon proper showing (§11(c)). SEC may apply to any District Court or to the Supreme Court of the District of Columbia for enforcement of such orders. The court may take exclusive jurisdiction and possession of the companies and assets and shall have jurisdiction to appoint a trustee and may appoint SEC as sole trustee (§11(d)).

In addition to simplification required by order of SEC after January 1, 1938, it is also provided in Section 11 that after January 1, 1936 the companies themselves may submit plans for reorganization for the purpose of meeting the requirements of Section 11. SEC will supervise such plans, make necessary modifications, and may apply to the courts for enforcement thereof (§11(e)).

Service, Sales, and Construction Contracts

Section 13 establishes very strict provisions with respect to service, sales, and construction contracts. It is made absolutely unlawful for a registered holding company, after April 1, 1936, by any means to enter into or perform any contract for furnishing any service or construction work or for the sale of goods to any associate company which is a public utility or mutual service company. This restriction does not apply, however, to transactions involving unusual or special circumstances or not in the ordinary course of business (§13(a)).

In addition, it is unlawful, after April 1, 1936, for any subsidiary of a registered holding company or for any mutual service company to enter into or perform service, sales, or construction contracts for any associate company except in accordance with rules, regulations, or orders prescribed by SEC to insure that such contracts are performed at cost, fairly allocated among such associate companies. SEC may grant certain exceptions to this clause (§13(b)).

SEC is to prescribe rules, regulations, and orders governing the approval of companies as mutual service companies. SEC is also given a great deal of authority with respect to the issuance of rules and regulations governing the operations of such companies, the principle being that the operating companies are not to pay fees which include a profit to the service or construction companies (See §§13(c), (d), (e), and (f)).

It is finally provided that SEC shall make investigations of the making, performing, and costs of service, sales, and construction contracts, and shall report to Congress the results and shall recommend legislation on the basis thereof (§13(g)).

Regulation of Security Issues

In order lawfully (1) to issue or sell any security or (2) to exercise any privilege or right to alter the priorities, preferences, voting power, or other rights of an outstanding security, a registered holding company or any subsidiary thereof must first file a declaration with SEC pursuant to Section 7 and receive an order permitting such declaration to become effective (§6(a)). These provisions shall not apply (1) to the issuance, renewal, or guaranty of a note or draft not a part of a public offering which matures or is renewed for not more than nine months and aggregates, together with other such notes and drafts, not more than 5% of par value (market value in case of no par) of outstanding securities (SEC may permit a greater amount than 5% if necessary or appropriate in the public interest or for the protection of investors or consumers), nor (2) to security issues made pursuant to conversion or subscription rights outstanding on January 1, 1935 (§6(b)).

In addition, SEC is authorized to exempt from the foregoing restrictions issues by a subsidiary to finance its business if such issues have been approved by the state commission of the state where such subsidiary is organized and doing business (§6(b)). This section clearly provides a method whereby duplication of security issue regulation by both state and federal agencies can be avoided. The same section further authorizes SEC to exempt issues by a subsidiary which is not (a) a holding company, (b) a public utility, (c) an investment company, or (d) a fiscal or financing agent of (a), (b), or (c).

However, even for transactions which may be exempt from the restrictions, a certificate of notification setting forth such information as SEC may require shall be filed within 10 days after the consummation thereof (§6(b)).

The declaration filed under Section 7 of the Act shall include such of the data required by Section 7 of the Securities Act of 1933,[12] as amended, as SEC may prescribe and such other information concerning declarant, associate companies, the particular security, and compliance with state laws as SEC may require (§7(a)(1) and (2)). The declaration is to become effective within a reasonable time after filing unless SEC shall have ordered the declarant to show cause why it should become effective (§7(b)). Certain restrictions are imposed, however, in that SEC *shall not permit* a declaration to become effective unless it finds that:

1. The security is a par value common stock without preferences, a secured bond (thus, holding companies cannot issue no par stocks, preference stocks, or debentures) a guaranty or assumption of a security of another company; or a receiver's or trustee's certificate (§7(c)).

2. The security is issued or sold for refunding, extending, exchanging, etc., an outstanding security or for effecting a merger, consolidation, or other reorganization; for financing the business of the declarant as a public utility; for financing the business of declarant when declarant is neither a holding company nor a public utility company; or for necessary and urgent corporate purposes under specified conditions (§7(c)).

3. The security issue was authorized by the company prior to January 1, 1935, and is one which SEC authorizes as necessary or appropriate in the public interest or for the protection of investors or consumers (§7(c)).

Still further restrictions provide that the security must be reasonably well adapted to the security structure of both the declarant and of other companies of the system; the security must be reasonably adapted to the earning

[12] Public No. 22, 73rd Congress, 48 Stat. 74, amended by Title II of Securities Exchange Act of 1934, 48 Stat. 881.

power of the declarant; the financing must be necessary and appropriate to the economical and efficient operation of the business; fees and commissions must be reasonable; in case of a guaranty or assumption the risk must not be improper; and the terms of sale must not be detrimental to the interest of public, investors, or consumers (§7(d)). Furthermore, SEC is not to permit a declaration to become effective if the proper state authorities advise that state laws have not been complied with (§7(g)). If this last provision is complied with, SEC shall permit to become effective a declaration for altering preferences, priorities, voting powers, or other rights, unless SEC finds that the result would be an unfair or inequitable distribution of voting power (§7(e)).

In addition to these qualifications which must be met, two express prohibitions are made with respect to the manner of sale. Registered holding companies and their subsidiaries are forbidden: (1) to sell securities of a holding company from house to house, and (2) to sell securities of a holding company through officers or employees of a subsidiary (§6(c)).

Intercompany Loans and Other Transactions

1. Intercompany Loans. Up-stream loans are absolutely unlawful, except that with respect to such loans as were in existence at the time of the passage of the Act there may be renewals or extensions of time (§12(a)). All other intercompany loans (i.e., down-stream or lateral loans) are unlawful if made in contravention of such rules and regulations as SEC may prescribe (§12(b)).

2. Dividend Payments. Holding companies and subsidiaries cannot declare or pay dividends in violation of such rules as SEC may prescribe to protect the financial integrity of the system, to safeguard working capital, or to prevent payment out of capital or unearned surplus, etc. (§12(c)).

3. Acquisition and Redemption of Securities. The same restrictions apply to the acquisition or redemption by a company of its securities as apply to dividend payments (§12(c)).

4. Sale of Securities and Utility Assets. A holding company cannot sell securities (of other companies) or utility assets which it owns except in compliance with the rules of SEC regarding consideration, competitive conditions, fees, commissions, accounts, and disclosure of interest (§12(d)).

5. Solicitation of Proxies. No person may solicit proxies, authorizations, etc., regarding the security of a holding company or subsidiary except in compliance with the rules of SEC (§12(e)).

6. Other Transactions. A registered holding company or subsidiary, by any means, cannot undertake any transaction "not otherwise unlawful under this title" with any company in the same system or with any affiliate of any system company if such action is in contravention of the rules, regulations, and orders of SEC in regard to reports, accounts, costs, maintenance of competitive conditions, disclosure of interest, duration of contracts, etc. (§12(f)). It is also unlawful for any affiliate of any operating company by use of the mails or other instrumentality of interstate commerce or for any affiliate of a registered holding company or of a subsidiary thereof, or for any affiliate of an operating company engaged in interstate commerce to enter in any way into or perform any transaction "not otherwise unlawful under this title" with a company of which it is an affiliate in violation of rules, etc., concerning accounts, costs, competitive conditions, etc. (§12(g)).

7. Contributions. Holding companies and subsidiaries are expressly forbidden to make contributions to political campaigns or parties (§12(h)).

8. Lobbying. Lobbyists must file with SEC a statement showing nature of subject matter, fees, etc. (§12(i)).

Acquisition of Interest in Electric and Gas Utilities Serving the Same Territory

Whenever a state law prohibits or requires approval of the ownership or operation by a single company of a gas utility *and* an electric utility serving substantially the same territory, a holding company is prohibited: (1) to take any step, without express approval of the state commission, which results in its having any interest in both types of utilities serving approximately the same territory; or (2) if it already has such an interest, to acquire, without the express approval of the state commission, any interest in an electric *or* gas utility serving substantially the same territory as that served by the companies in which it already has an interest (§8).

Acquisition of Securities and Utility Assets and Other Interests

Inasmuch as one of the fundamental purposes of the Act is to effect simplification of holding company systems, it obviously becomes necessary to give SEC power to supervise the further growth of holding company systems. Such control is provided by Sections 9 and 10. Section 9 prescribes the acquisitions which may not be made without SEC approval and Section 10 provides the manner of obtaining such approval.

Approval is required before a holding company or subsidiary can acquire securities or utility assets or any other interest in any business, or before any person (by use of the mails, etc.) may acquire the security of a public utility if such person is an affiliate of that company or of any public utility or holding company or if such person would become such an affiliate by virtue of the acquisition (§9(a)). There are several exceptions, however, to this requirement for SEC approval. These are:

1. Acquisitions, approved by a state commission, of utility assets by an operating company (§9(b)).
2. Acquisitions, approved by a state commission, by an operating company of the securities of an operating subsidiary, provided that both such companies and all the operating companies in the same holding company system are organized in the same state and that the business of all such companies is confined substantially to that state (§9(b)).
3. Acquisition of securities of the United States, states, municipalities, etc., their agencies, instrumentalities, etc. (§9(a)).
4. Acquisition of such other marketable securities and in such amounts as SEC may find appropriate for investment of current funds (§9(c)).
5. Acquisition of commercial paper and other securities as SEC may permit as appropriate in the ordinary course of business (§9(c)).

In these cases of acquisition of utility assets or securities or other interests where SEC approval is necessary, application to SEC must be made in such form as SEC may prescribe. These applications are to include a voluminous amount of data with regard to the items to be acquired, their value, the consideration, and many other items which need not be detailed here (§10).

The Act provides several conditions which must be satisfied before SEC shall approve an application for acquisition. First, there must be a satisfactory showing that state laws have been complied with, except where such compliance would be detrimental to the carrying out of the provisions of Section 11 (the death sentence) (§10(f)). Second, SEC shall not approve acquisi-

tions resulting in detrimental interlocking relations or concentration of control; the consideration, fees, etc., must be reasonable; and the acquisition must not result in undue complications of capital structure (§12(b)). Notwithstanding these provisions, SEC shall not approve an acquisition which is unlawful under Section 8 of the Act or which is detrimental to the carrying out of Section 11; nor shall it approve acquisitions unless it finds that they will tend toward the economical and efficient development of an integrated public utility system (§10(c)).

The Commission must, of course, act upon applications for acquisition within a reasonable time, and it is empowered to prescribe terms and conditions, including price to be paid, in its orders of approval (§§10(d) and (e)).

Provisions Relating to Officers and Directors

As hereinabove noted, interlocking controls through common officers and directors are prohibited except in such cases as SEC may permit as not adversely affecting the interest of public, investors, or consumers. It is also provided that officers and directors of a registered holding company must file with SEC a statement of the securities of the holding company and of its subsidiaries of which they are beneficial owners. This statement must be filed at the date the holding company registers or within 10 days after the person is appointed to office. In addition, every officer or director must file a report within 10 days after the close of each month showing changes in ownership of securities (§17(a)).

In order to prevent unfair use of so-called "inside information," profits realized by officers or directors from transactions (completed within 6 months) in securities of their companies shall inure to and be recoverable by the companies, regardless of the intentions of the parties, except in the case of a security acquired in good faith for a debt previously acquired. This provision is not to apply to transactions which SEC is empowered to exempt (§17(b)).

The provisions discussed above cover the principal transactions subject to the holding company law. The remaining sections of the Act are concerned primarily with the filing of reports, the keeping of accounts, penalties, hearings, and other procedural and administrative details. It is significant to note, however, that under Section 30 SEC is directed to make an investigation of investment trusts and report to the Congress its findings and recommendations not later than January 4, 1937.

In conclusion it must be pointed out that, whereas the preponderant majority of the provisions of the Act apply to registered holding companies, their subsidiaries, etc., if a holding company fails or refuses to register, the Act prohibits practically all activities by such unregistered holding companies. According to Section 4(a) it is unlawful after December 1, 1935 for an *unregistered* holding company, directly or indirectly, to:

1. Sell, transmit or distribute, or to own or operate utility assets for the transmission or distribution of gas or electricity in interstate commerce.

2. Use the mails or any means or instrumentality of interstate commerce to: (a) negotiate or perform service, sales, or construction contracts; (b) distribute, offer for sale or exchange securities of any holding company, public utility, or affiliate; (c) acquire or negotiate for acquisition of securities or utility assets.

3. Engage in any business in interstate commerce.

4. Own or control with power to vote any security of any subsidiary that does any of the acts enumerated in paragraphs 1, 2, and 3 above.

Further Results of the Financial Survey of Urban Housing

By DAVID L. WICKENS*

A SERIOUS lack of organized information on housing and urban real estate as a whole has long been recognized. The result of the general practice of considering real estate transactions largely as separate items has been to leave the community without an adequate factual basis upon which to consider the housing question and the problems associated with it.

Although the urban real property of the country has long since exceeded farm real estate in value and in the number of people affected, the basic information available in the urban field has lagged approximately a half century behind that provided for agriculture.

Probably one reason for the neglect of data on urban housing has been the number and diversity of factors involved in an adequate analysis. From an economic and financial standpoint urban residential problems center about the factors of value, rent, and financing. All these in turn are basically affected not only by the physical elements of size, materials and age of the structure, but also by the less tangible factors of location, growth and movement of population, the occupying family and its income, and the income levels of the community, as well as by the terms of financing. These items are important individually, but they have their greatest significance in relation to each other.

The Financial Survey of Urban Housing for 1934 is the first effort on a comprehensive scale to obtain data on these items so that they may be shown in relation to each other for the same dwellings and to the families which occupied them. Four years of general depression, with the construction industry at its lowest ebb in many years, emphasized the need for a more businesslike and orderly approach to the housing question. The CWA search for white collar employment provided the means for carrying out the plan.[1]

The results of the Financial Survey have been set forth in over 60 comprehensive tables for each of the 52 cities listed in Table I, and in less comprehensive tabulations for 9 other cities. The present discussion undertakes to illustrate the nature and variety of the material and its use for individual cities and for the country as a whole. Since the prime purpose of the inquiry was to obtain factual information, its results can best be indicated by citation of the data themselves. The numerous implications of the primary and derived data, in addition to those pointed out, will be apparent.

I. Present Housing Accommodations Examined

The size of dwelling units is the first measure employed by the survey to show the adequacy of housing conditions. Among the wide range for different cities particularly noticeable is the larger size of houses which are occupied by their owners as compared with tenant homes. This difference averages

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[1] For an account of the methods used in the study, see David L. Wickens, "The Financial Survey for Urban Housing," *Journal of the American Statistical Association*, March, 1935, Supplement, p. 25.

more than one room per dwelling unit.[2] Of 61 cities surveyed, owner-occupiers in 46 of them average more than 5.5 rooms per dwelling unit, while tenants in 48 cities average less than 5 rooms each.

The average size of dwelling varies in general with geographical location. The housing quarters of the New England and Middle Atlantic states have the largest average number of rooms per unit of any section of the country, each of the 11 reporting cities averaging above 6 rooms per unit for owner-occupiers. The Mountain states have the smallest units, owner-occupiers in eight cities averaging 5.5 rooms or less. The South Atlantic states, representing the wide variety of living conditions from Maryland to Florida, have the greatest variation. Corresponding differences are shown for tenants. In general, these averages show that adequate housing develops gradually in a community and that the smallest living quarters are found in the newest and lowest-income areas.

The greater space accommodation generally found among home owners is further shown by the average number of persons per room. The tables of the Financial Survey show that in 55 of the 61 cities the average density for owner-occupied dwelling units is either .6 or .7 persons per room, whereas in 50 cities tenant units average from .8 to 1.0 persons per room. Apartment dwelling accounts for only a part of this difference.

The principal factor in determining the difference in size of dwelling units is the family income of the occupants. Both owner and tenant families, when classified on the basis of their annual incomes, show an increasing average number of rooms as the size of family income increases. Tenant families show consistently fewer rooms per family than do owner-occupiers, even when within the same income group. This may be illustrated by the city of Peoria, Illinois, where owner families with incomes between $1,000 and $1,500 averaged 5.6 rooms, and tenant families in the same income group averaged 4.8 rooms. Greater age and lower value generally characterize the tenant dwelling.

The Survey has provided the first tangible measure of average value for the principal classes of dwellings.[3] Average values of one-family dwellings vary from $8,001 in Waterbury to $1,830 in Pueblo. Brick structures average more than twice the value of wood buildings. Rented dwellings average about ¾ the value of those occupied by owners. Table I shows these values for individual cities.

Rents as well as values are shown for all types of dwellings, by class of materials and number of rooms, and for each of the years 1929, 1932, and 1933. The summary of the rents for each group of cities covered in each geographic area (Table II) indicates an average rent of $252 per year and $21 per month in 1933, and an average of $4.80 per room per month. These data are significant as providing a basis for comparison in considering low-cost housing.

The Survey has also broken down the gross rent item commonly represented by the quoted rent bill, in order to find the cost for space as a separate item apart from the charge for facilities furnished with the space. The items

[2] "Dwelling unit" refers to the housing accommodation used by an individual family. "Rooms" are exclusive of hallway and bath; kitchenettes and dinettes are counted as half rooms.

[3] The *Census of Population* for 1930 gathered information on the value of homes, but the results were shown only as number of cases within value ranges.

TABLE I. AVERAGE VALUE OF ONE-FAMILY DWELLINGS, OWNER-OCCUPIED AND RENTED, BY MATERIALS OF CONSTRUCTION, 52 CITIES, JANUARY 1, 1934

City and Geographic Area	Owner-Occupied			Rented		
	All Materials	Wood	Brick	All Materials	Wood	Brick
New England						
Portland, Me.	$ 6,051	$ 5,459	$11,283	$ 4,445	$ 3,919	$ 5,438
Worcester, Mass.	6,642	6,205	12,872	6,133	6,186	6,433
Providence, R. I.	5,903	5,560	19,308	4,706	4,692	7,083
Waterbury, Conn.	8,001	7,224	23,280	.....	.....	.....
Middle Atlantic						
Binghamton, N. Y.	6,163	5,988	8,500	.....	.....	.....
Syracuse, N. Y.	5,901	5,695	13,958	5,436	5,279	5,900
Trenton, N. J.	4,200	3,820	4,500	3,135	3,051	3,339
Erie, Pa.	4,576	3,942	7,276	3,786	3,353	5,829
East North Central						
Cleveland, Ohio	6,249	5,390	14,327	5,464	5,017	11,062
Indianapolis, Ind.	4,890	3,815	11,092	3,126	2,761	8,408
Peoria, Ill.	4,405	3,888	9,965	3,087	2,937	6,578
Lansing, Mich.	3,813	3,578	7,482	2,970	2,834	4,050
Kenosha, Wis.	5,069	4,639	8,258	4,969	4,724	6,144
Racine, Wis.	4,961	4,734	6,536	4,342	4,101	5,404
West North Central						
Minneapolis, Minn.	4,204	3,506	8,919	3,375	2,966	7,180
St. Paul, Minn.	3,766	3,319	7,066	3,285	2,840	5,238
Des Moines, Iowa	3,157	2,717	6,543	2,486	2,288	3,637
St. Joseph, Mo.	3,296	2,669	6,841	2,483	2,206	2,826
Springfield, Mo.	2,651	2,279	6,556	1,940	1,743	5,184
Fargo, N. D.	4,811	4,434	12,430	.....	.....	.....
Sioux Falls, S. D.	4,101	3,859	9,875	3,291	3,160	5,163
Lincoln, Neb.	3,548	2,963	8,310	2,524	2,418	3,930
Topeka, Kan.	3,186	3,053	5,416	2,258	2,200	2,404
Wichita, Kan.	2,722	2,392	7,227	2,066	1,970	5,450
South Atlantic						
Hagerstown, Md.	4,601	2,752	5,614	2,535	1,762	3,247
Richmond, Va.	5,218	3,237	7,679	3,640	2,577	4,539
Wheeling, W. Va.	3,768	3,491	5,704	3,519	2,810	6,035
Asheville, N. C.	3,807	3,131	7,932	3,234	3,008	5,341
Greensboro, N. C.	5,226	4,397	7,752	3,382	2,753	7,468
Charleston, S. C.	5,023	4,123	10,200	2,723	2,380	7,000
Columbia, S. C.	4,779	3,988	6,452	2,907	2,348	5,457
Atlanta, Ga.	4,339	3,097	7,535	2,793	2,322	5,154
Jacksonville, Fla.	3,499	3,042	8,659	.....	.....	.....
East South Central						
Paducah, Ky.	2,106	1,633	4,962	1,188	995	3,271
Birmingham, Ala.	3,197	2,732	7,646	2,703	2,411	6,579
Jackson, Miss.	4,462	3,866	6,215	.....	.....	.....
West South Central						
Little Rock, Ark.	3,230	2,622	5,668	1,794	1,506	4,380
Baton Rouge, La.	3,806	3,696	6,133	.....	.....	.....
Oklahoma City, Okla.	3,838	3,074	6,571	2,580	2,153	4,466
Austin, Tex.	3,732	2,985	9,951	2,529	2,236	7,477
Dallas, Tex.	3,695	3,026	6,596	2,796	2,475	5,428
Wichita Falls, Tex.	4,146	2,089	9,219	1,970	1,836	3,914
Mountain						
Butte, Mont.	2,355	2,091	3,091	1,719	1,521	2,552
Boise, Idaho	3,147	2,953	4,649	.....	.....	.....
Casper, Wyo.	2,594	2,378	5,847	.....	.....	.....
Pueblo, Colo.	1,830	1,435	2,334	1,557	1,273	1,679
Phoenix, Ariz.	4,142	2,082	4,412	3,368	1,707	3,905
Salt Lake City, Utah	3,224	2,062	3,534	2,677	2,068	2,923
Pacific						
Seattle, Wash.	3,043	2,863	6,321	2,587	2,500	4,911
Portland, Ore.	3,104	2,920	9,144	2,655	2,479	*
Sacramento, Cal.	3,995	3,278	6,087	3,255	2,628	5,047
San Diego, Cal.	3,568	3,107	7,800	2,872	2,538	3,667

* Insufficient reports.

TABLE II. AVERAGE RENT BILLS OF TENANT FAMILIES IN 61 CITIES, BY GEOGRAPHIC DIVISIONS*

Area and Number of Cities	Rent per Dwelling Unit				Rent per Room per Month 1933
	Per Year			Per Month 1933	
	1929	1932	1933		
61 Cities	$329	$284	$252	$21	$4.80
New England (6 cities)	340	293	298	25	5.10
Middle Atlantic (5 cities)	351	314	274	23	4.30
East North Central (7 cities)	418	347	295	25	5.50
South Atlantic (10 cities)	258	236	217	18	4.50
West North Central (10 cities)	351	311	277	23	4.40
East South Central (4 cities)	239	190	159	13	3.30
West South Central (7 cities)	321	273	236	20	4.70
Mountain (8 cities)	324	285	252	21	5.30
Pacific (4 cities)	344	354	257	21	5.20

* Arithmetic mean of total reported.

covered in this special study of cost were furnishings, electricity, heat, water, garage, janitor, and electric refrigeration. By use of this information on the frequency and cost of services included in rent, the cost chargeable to housing proper is shown to be substantially less than the total rent bill and rent for space only in apartments may prove to be actually lower than for one-family dwellings. The summary of the reports from three cities (Table III) illustrates the differences in rents on a gross and net basis.

II. Housing Credit

Since financing represents the principal means for acquiring homes, the Survey laid special emphasis on indebtedness, and the sources and terms of financing. The number of homes mortgaged is a substantial proportion of the total, and in some cities it represents a very large majority. Even more important is the consistently large proportion of the value of the property represented by the existing mortgage debt. If the data on these items, which appear in Table IV, are representative of the

TABLE III. ANNUAL COST OF FACILITIES INCLUDED IN RENT, BY TYPE OF DWELLING, AVERAGE OF THREE CITIES*

Type of Dwelling	Number of Reports	Average Number of Rooms per Unit	Average Cost of Facilities Included in Rent†		Average Gross Rent, All Dwelling Units Reporting		Average Net Rent for Space‡		Cost of Facilities as Per Cent of	
			Per Unit	Per Room	Per Unit	Per Room	Per Unit	Per Room	Gross Rent	Net Rent for Space
One-family	295	5.6	$30.39	$5.43	$300	$54	$269.61	$48.14	10.1%	11.3%
Two-family	185	4.6	32.75	7.12	254	55	221.25	48.10	12.9	14.8
Apartment	86	3.3	81.62	24.73	308	93	226.38	68.60	26.5	36.1

* Cleveland, Ohio; Minneapolis, Minnesota; and Portland, Oregon; arithmetical average of city averages.
† Adjusted on the basis of ratio of city average rent to rent on the same type of dwelling reporting cost of facilities.
‡ Gross average rent less adjusted cost of facilities.

TABLE IV. PERCENT OF OWNER-OCCUPIED AND RENTED RESIDENTIAL PROPERTIES REPORTING WHICH WERE MORTGAGED AND RATIO OF DEBT TO VALUE, 61 CITIES, JANUARY 1, 1934

City and Geographic Area	Percent of Properties Mortgaged		Ratio of Average Debt to Average Value	
	Owner Occupied	Rented	Owner Occupied	Rented
New England	%	%	%	%
Portland, Me.	46.7	41.3	50.5	53.4
Nashua, N. H.	56.8	.....	42.1	.....
Burlington, Vt.	49.7	41.8	45.8	53.5
Worcester, Mass.	83.6	69.3	67.1	69.3
Providence, R. I.	63.2	50.4	49.4	58.7
Waterbury, Conn.	81.1	.....	60.0	.....
Middle Atlantic				
Binghamton, N. Y.	45.6	.....	45.9	.....
Syracuse, N. Y.	76.9	67.1	57.0	62.7
Trenton, N. J.	68.8	39.8	58.4	59.7
Erie, Pa.	49.7	36.5	57.7	64.5
Williamsport, Pa.	36.1	28.7	56.6	50.1
East North Central				
Cleveland, Ohio	67.0	53.2	57.2	67.7
Indianapolis, Ind.	63.8	51.2	56.2	57.0
Decatur, Ill.	50.1	31.8	60.4	61.4
Peoria, Ill.	54.0	40.3	50.4	52.5
Lansing, Mich.	57.4	36.5	59.5	57.0
Kenosha, Wis.	65.3	48.2	53.8	58.4
Racine, Wis.	67.1	53.5	58.9	59.8
West North Central				
St. Paul, Minn.	48.0	41.4	50.0	53.7
Minneapolis, Minn.	55.9	46.2	52.4	56.7
Des Moines, Ia.	49.5	35.4	53.2	52.2
Fargo, N. D.	57.9	.....	50.4	.....
Sioux Falls, S. D.	53.4	40.8	46.5	48.8
Lincoln, Neb.	48.2	36.5	53.6	63.3
Topeka, Kan.	44.0	26.2	50.4	52.0
Wichita, Kan.	53.5	38.8	56.8	57.4
Springfield, Mo.	50.1	25.4	52.9	48.2
St. Joseph, Mo.	42.9	24.7	52.5	54.5
South Atlantic				
Frederick, Md.	30.5	.....	49.7	.....
Hagerstown Md.	49.6	25.2	60.9	67.4
Richmond, Va.	49.7	34.2	59.4	62.6
Atlanta, Ga.	58.3	40.7	57.3	70.0
Wheeling, W. Va.	35.3	21.9	49.4	51.1
Greensboro, N. C.	36.8	29.3	61.1	61.2
Columbia, S. C.	58.4	33.7	57.4	62.6
Charleston, S. C.	32.9	23.6	50.3	51.9
Asheville, N. C.	46.9	14.5	68.3	79.7
Jacksonville, Fla.	47.6	.....	52.2	.....
East South Central				
Paducah, Ky.	30.7	7.1	58.7	48.2
Knoxville, Tenn.	43.3	25.6	49.3	71.4
Birmingham, Ala.	52.4	22.9	61.1	52.0
Jackson, Miss.	61.5	.....	50.4	.....
West South Central				
Oklahoma City, Okla.	61.7	43.1	58.2	55.5
Dallas, Tex.	53.3	39.6	53.5	56.7
Austin, Tex.	39.2	29.2	46.5	50.9
Wichita Falls, Tex.	41.4	20.9	66.3	72.4
Baton Rouge, La.	53.3	.....	45.0	.....
Shreveport, La.	59.7	35.1	55.0	54.3
Little Rock, Ark.	43.8	23.9	62.9	62.2

debt status of urban residential properties for the country as a whole, it would appear that urban homes are more heavily indebted than are farms.

The lower frequency of debt on rented properties shows that financing is more especially the problem of present and prospective home owners than of owners of houses for rent.

On the other hand, the amount of debt carried by rented dwellings averages fully as large in proportion to their value and, in view of their greater average age, may constitute fully as much of a financing problem as on the owner-occupied property. The generally higher ratio of debt to value of rented dwellings may be noted in connection with the adequacy of financing for this type of property.

The sources of mortgage credit were shown to vary widely between cities. In many cities more than half of the total loans were held by a single class of lending agencies such as life insurance companies, building and loan associations, savings banks, or individuals.

TABLE IV. (*Cont'd*) PERCENT OF OWNER-OCCUPIED AND RENTED RESIDENTIAL PROPERTIES REPORTING WHICH WERE MORTGAGED AND RATIO OF DEBT TO VALUE, 61 CITIES, JANUARY 1, 1934

City and Geographic Area	Percent of Properties Mortgaged		Ratio of Average Debt to Average Value	
	Owner Occupied	Rented	Owner Occupied	Rented
Mountain	%	%	%	%
Butte, Mont.	24.4	15.1	41.3	52.2
Casper, Wyo.	44.0	.....	56.9	.....
Boise, Idaho	45.1	.....	43.2	.....
Pueblo, Colo.	40.9	22.5	59.2	58.9
Albuquerque, N. M.	54.6	44.1	60.5	43.4
Phoenix, Ariz.	55.6	43.6	56.3	53.3
Salt Lake City, Utah	54.0	42.9	58.0	59.8
Reno, Nev.	50.6	20.2	49.7	49.3
Pacific				
Portland, Ore.	51.0	33.8	56.6	54.9
Seattle, Wash.	49.2	36.4	54.7	57.2
San Diego, Calif.	50.6	38.6	54.4	57.6
Sacramento, Calif.	54.5	45.0	61.8	64.2

Individuals provide a larger volume of credit than any other source, and are particularly important in the New England and Middle Atlantic states. Commercial and savings banks are also most important in those areas, and in the Pacific states. Marked differences often appear in the sources of credit for rented and owner-occupied properties, and between loans on first mortgage security, second mortgages, and land contracts. Table V shows as a percentage distribution the relative importance of agencies lending on owner-occupied properties, loans of all priorities being combined.

TABLE V. SOURCES OF MORTGAGE CREDIT: PERCENTAGE DISTRIBUTION OF MORTGAGE INDEBTEDNESS ON OWNER-OCCUPIED RESIDENTIAL PROPERTIES, ALL PRIORITIES, JANUARY 1, 1934

City and Geographic Area	Total Amount Reporting Agency (in thousands)	Percent of Total Amount of Loans									
		Life Ins. Co.	Bldg. and Loan Assn.	Commercial Bank	Savings Bank	Mortgage Co.	Construction Co.	Title & Trust Co.	HOLC	Individual	Other
New England		%	%	%	%	%	%	%	%	%	%
Portland, Me.	$1,973.7	2.4	25.5	10.0	36.9	0.7	.....	0.6	0.8	22.1	1.0
Nashua, N. H.	427.9	.....	28.3	29.2	19.5	.....	.....	3.9	0.5	17.7	0.9
Burlington, Vt.	466.9	0.6	26.2	10.4	34.4	.....	.....	4.9	1.1	20.2	2.2
Worcester, Mass.	4,912.8	0.9	3.0	5.6	70.8	0.9	0.1	1.0	1.3	10.4	6.0
Providence, R. I.	6,258.6	4.0	9.6	16.1	30.7	4.4	0.3	3.3	1.4	26.3	3.9
Waterbury, Conn.	2,249.5	2.0	2.4	17.3	35.3	0.8	.....	4.9	3.0	31.3	3.0
Middle Atlantic											
Binghamton, N. Y.	783.6	3.6	0.9	12.7	26.7	0.3	.....	0.1	.....	53.6	2.1
Syracuse, N. Y.	3,563.5	5.1	0.7	9.6	59.8	0.6	0.2	1.2	0.2	20.2	2.4
Trenton, N. J.	3,809.3	2.8	11.4	8.5	4.0	3.2	0.1	1.8	1.1	63.0	4.1
Erie, Pa.	4,137.4	2.5	15.9	10.4	2.4	1.5	0.3	1.6	3.2	57.1	5.1
Williamsport, Pa.	619.3	1.0	2.9	33.9	15.8	1.9	0.3	4.2	.....	36.8	3.2
East North Central											
Cleveland, Ohio	51,603.5	9.7	12.4	40.1	16.2	1.4	0.5	2.3	3.0	11.3	3.1
Indianapolis, Ind.	4,594.3	9.1	53.8	7.5	1.2	0.5	.....	9.0	0.9	14.6	3.4
Decatur, Ill.	678.4	3.6	46.9	16.4	0.9	0.9	0.3	2.1	0.7	26.8	1.4
Peoria, Ill.	3,246.8	10.4	59.5	3.7	0.8	0.9	0.6	1.0	0.9	16.3	5.9
Lansing, Mich.	1,446.5	14.8	21.4	5.8	3.2	2.2	1.0	1.8	4.8	39.5	5.5
Kenosha, Wis.	2,015.4	0.4	16.4	3.0	0.6	8.8	0.2	19.9	2.3	39.9	8.5*
Racine, Wis.	5,173.0	0.9	26.9	3.2	1.1	12.2	0.5	2.3	2.3	45.2	5.4†
West North Central											
Minneapolis, Minn.	10,000.7	22.4	8.5	5.0	6.3	13.3	0.4	3.0	1.7	35.3	4.1
St. Paul, Minn.	1,802.5	12.1	8.5	4.8	0.9	11.1	0.6	2.1	3.9	53.8	2.2
Des Moines, Iowa	3,051.6	21.5	6.3	6.7	2.9	9.7	0.5	0.9	6.9	39.9	4.7
St. Joseph, Mo.	1,002.4	5.6	21.5	9.1	1.6	23.3	0.3	5.9	0.9	22.9	8.9
Springfield, Mo.	1,082.5	12.6	21.6	6.0	0.5	9.9	0.2	2.1	3.1	37.4	6.6
Fargo, N. D.	1,237.7	3.7	24.1	6.9	1.7	8.5	0.5	1.3	17.1	30.5	5.7
Sioux Falls, S. D.	1,326.8	17.2	2.3	6.6	2.4	25.3	0.7	0.3	5.6	32.5	7.1
Lincoln, Neb.	1,613.4	16.0	36.2	1.8	0.7	6.3	0.5	8.6	1.0	25.9	3.0
Topeka, Kan.	1,923.6	10.5	51.3	3.5	3.3	8.4	0.5	2.4	4.7	13.8	1.6
Wichita, Kan.	2,225.5	27.4	27.6	1.3	0.1	10.7	0.9	7.6	2.7	18.9	2.8
South Atlantic											
Frederick, Md.	292.3	.....	31.8	25.2	22.5	0.7	.....	0.7	1.3	15.2	2.6
Hagerstown, Md.	1,121.3	1.7	8.0	10.2	0.1	0.8	0.2	0.4	1.5	74.4	2.7
Richmond, Va.	3,744.9	18.7	2.0	19.1	1.9	18.7	1.1	6.4	2.1	20.2	10.7‡
Wheeling, W. Va.	1,696.2	12.8	12.7	26.3	11.1	1.2	1.6	2.2	3.7	20.8	7.6
Asheville, N. C.	1,074.2	44.8	7.5	8.1	0.7	16.0	0.7	2.1	2.8	15.6	1.7
Greensboro, N. C.	1,059.3	53.9	12.1	8.4	0.3	7.1	3.0	0.4	1.0	8.5	5.3
Charleston, S. C.	478.7	7.2	1.6	9.5	0.8	2.2	0.4	2.9	5.0	63.4	7.0
Columbia, S. C.	933.9	17.4	25.8	2.0	0.2	1.0	0.1	1.5	3.9	45.2	2.9
Atlanta, Ga.	6,293.9	42.6	2.2	1.9	2.6	25.3	0.4	2.0	3.1	15.9	4.0
Jacksonville, Fla.	660.1	29.3	5.0	3.1	.....	7.8	.....	1.0	6.1	43.5	4.2

(*Continued on page 66*)

TABLE V. (*Cont'd.*) SOURCES OF MORTGAGE CREDIT: PERCENTAGE DISTRIBUTION OF MORTGAGE INDEBTEDNESS ON OWNER-OCCUPIED RESIDENTIAL PROPERTIES, ALL PRIORITIES, JANUARY 1, 1934

City and Geographic Area	Total Amount Reporting Agency (in thousands)	Percent of Total Amount of Loans									
		Life Ins. Co.	Bldg. and Loan Assn.	Commercial Bank	Savings Bank	Mortgage Co.	Construction Co.	Title & Trust Co.	HOLC	Individual	Other
East South Central		%	%	%	%	%	%	%	%	%	%
Paducah, Ky.	$369.0	24.7	10.8	15.7	5.3	1.8	0.3	13.3	1.7	21.0	5.4§
Knoxville, Tenn.	532.5	16.1	11.7	3.0	1.1	10.9	1.1	15.8	4.1	33.5	2.7
Birmingham, Ala.	4,545.2	39.6	14.6	3.9	1.0	14.6	0.3	1.3	5.0	15.8	3.9
Jackson, Miss.	587.2	59.5	17.4	4.0	0.1	3.3	0.3	0.7	4.6	10.1	.....
West South Central											
Little Rock, Ark.	1,917.3	16.4	10.4	32.3	1.4	8.1	0.2	1.0	9.1	18.5	2.6
Baton Rouge, La.	347.1	0.7	59.9	9.7	0.4	1.2	.....	.....	5.4	18.3	4.4
Shreveport, La.	545.5	3.4	53.2	3.1	.....	1.4	2.1	0.4	2.0	28.9	5.5
Oklahoma City, Okla.	4,324.1	26.9	31.7	0.9	1.0	12.0	0.4	1.4	7.1	17.2	1.4
Austin, Texas	790.9	5.6	9.2	4.0	0.1	15.9	12.0	0.6	0.8	47.8	3.1
Dallas, Texas	3,747.6	29.1	13.5	4.9	3.1	15.2	1.1	1.7	4.0	23.1	4.3
Wichita Falls, Tex.	657.6	23.1	20.4	2.6	.....	14.7	2.6	1.4	1.6	31.8	1.8
Mountain											
Butte, Mont.	632.5	0.3	1.2	14.5	1.4	2.0	0.1	2.7	7.4	60.5	9.9
Boise, Idaho	847.7	7.0	32.2	1.9	0.2	2.9	.....	1.8	10.1	41.1	2.8
Casper, Wyo.	517.9	1.6	51.7	5.1	0.8	0.8	0.3	2.7	14.1	22.0	0.9
Pueblo, Colo.	566.4	3.1	30.6	0.9	1.1	0.8	1.3	0.2	20.2	39.4	2.4
Albuquerque, N. M.	329.1	3.1	4.3	4.3	0.6	9.4	0.6	.....	8.1	66.5	3.1
Phoenix, Ariz.	1,246.4	14.7	4.5	3.9	7.6	12.5	1.1	2.0	8.3	43.5	1.9
Salt Lake City, Utah	4,179.6	19.1	12.7	3.9	6.6	14.4	2.5	10.4	3.7	23.4	3.3
Reno, Nevada	740.1	1.9	17.6	14.6	0.4	0.8	.....	1.5	5.2	52.4	5.6
Pacific											
Seattle, Wash.	6,730.8	19.2	4.0	4.3	19.0	13.1	0.3	3.9	3.9	28.2	4.1¶
Portland, Ore.	5,034.6	22.5	5.6	3.5	3.3	14.9	0.4	4.3	4.8	28.7	12.0
Sacramento, Calif.	3,293.0	8.2	11.4	9.9	2.8	5.2	0.2	0.3	0.8	40.3	20.9
San Diego, Calif.	5,197.0	11.6	12.2	16.0	8.8	10.7	0.7	1.2	2.2	31.6	5.0

Includes public bond issues as follows: * 2.8; † 1.0; ‡ 0.1; § 3.6; ¶ 0.3.

The cost of first mortgage credit on owned homes was found to average above 6% as the contract rate in nearly all cities covered by the inquiry. A total of 13 cities, mostly in the northeastern states, averaged less than 6% as the contract rate. Most cities in the Mountain area, the West South Central states, and some other southern cities averaged above 7%. The rates shown in Table VI do not include financing charges incident to making the loans. The costs so reported were computed by means of specially constructed tables and are shown in the Survey as effective interest rates or total credit cost.[4]

Owners of mortgaged property reported a substantial proportion of their loans as in arrears in 1934, for interest or principal payments, the most common proportion delinquent for owner-occupied dwellings being between 30 and 40%.

The terms for which mortgages have been made show a great preponderance of short periods for loans throughout the country. Only a small proportion of the loans were reported as being for 15 years or more. A summary for 10 cities shows an average of 9 years as the total contract term. Loans with short terms are most frequent in areas where commercial banks and individuals

[4] See Financial Survey of Urban Housing, "Special Tables for the Computation of Effective Interest Rates," United States Department of Commerce, June, 1935.

TABLE VI. CONTRACT INTEREST RATE, ANNUAL PAYMENT, ARREARAGE, AND TERMS OF FIRST MORTGAGE LOANS ON OWNER-OCCUPIED, ONE-FAMILY DWELLINGS, JANUARY 1, 1934 FOR 52 CITIES*

City and Geographic Area	Average Contract Interest Rate	Original Term of Loan					Percent in Arrears Jan., 1934
		Total	1 to 4 Yrs.	5 to 9 Yrs.	10 to 14 Yrs.	15 Yrs. or More	
New England	%	%	%	%	%	%	%
Portland, Me.	6.01	100.0	6.9	8.3	57.4	27.4	27.3
Worcester, Mass.	5.65	100.0	5.2	8.4	47.4	39.0	16.5
Providence, R. I.	6.06	100.0	3.1	5.9	45.0	46.0	27.7
Waterbury, Conn.	5.92	100.0	9.8	15.7	29.4	45.1	15.5
Middle Atlantic							
Binghamton, N. Y.	5.82	100.0	16.8	41.6	22.5	19.1	23.6
Syracuse, N. Y.	5.43	100.0	15.2	23.2	30.3	31.3	14.3
Trenton, N. J.	5.89	100.0	2.7	7.1	43.8	46.4	25.1
Erie, Pa.	5.94	100.0	15.7	39.8	26.6	17.9	46.8
East North Central							
Cleveland, Ohio	6.14	100.0	23.9	9.0	33.4	33.7	61.1
Indianapolis, Ind.	6.41	100.0	3.3	14.4	62.0	20.3	52.0
Peoria, Ill.	6.58	100.0	4.7	9.9	69.0	16.4	38.1
Lansing, Mich.	6.30	100.0	9.9	44.4	23.9	21.8	45.0
Kenosha, Wis.	6.08	100.0	42.1	21.2	27.0	9.7	49.3
Racine, Wis.	5.96	100.0	32.1	14.3	39.2	14.4	59.3
West North Central							
Minneapolis, Minn.	5.98	100.0	31.5	36.7	22.0	9.7	34.0
St. Paul, Minn.	5.93	100.0	25.7	48.4	15.4	10.5	23.0
Des Moines, Iowa	6.21	100.0	13.6	41.5	18.5	26.4	30.5
St. Joseph, Mo.	6.30	100.0	38.0	30.3	21.4	10.3	30.2
Springfield, Mo.	7.31	100.0	35.2	23.3	32.3	9.2	28.8
Fargo, N. D.	6.55	100.0	14.8	47.4	14.6	23.2	22.8
Sioux Falls, S. D.	6.25	100.0	19.7	53.6	14.7	12.0	24.7
Lincoln, Neb.	6.32	100.0	12.2	36.5	40.2	11.1	43.0
Topeka, Kan.	7.19	100.0	8.7	25.2	57.2	8.9	43.7
Wichita, Kan.	6.67	100.0	7.8	41.7	38.2	12.3	48.2
South Atlantic							
Hagerstown, Md.	5.88	100.0	53.1	6.8	28.4	11.7	14.6
Richmond, Va.	5.98	100.0	52.1	20.3	14.9	12.7	17.1
Wheeling, W. Va.	6.16	100.0	9.5	40.8	22.3	27.4	48.0
Asheville, N. C.	5.96	100.0	13.2	27.9	39.0	20.0	50.0
Greensboro, N. C.	5.96	100.0	10.5	23.5	44.1	21.9	42.8
Charleston, S. C.	6.84	100.0	37.3	28.4	18.6	15.7	21.4
Columbia, S. C.	7.11	100.0	20.7	17.8	46.9	14.6	50.6
Atlanta, Ga.	6.66	100.0	12.5	56.4	19.7	11.4	35.7
Jacksonville, Fla.	6.94	100.0	34.2	21.1	22.8	21.9	36.1
East South Central							
Paducah, Ky.	6.16	100.0	15.9	30.8	34.6	18.7	46.0
Birmingham, Ala.	6.93	100.0	18.4	30.7	29.2	21.7	58.5
Jackson, Miss.	6.71	100.0	10.4	24.1	34.4	31.1	49.6
West South Central							
Little Rock, Ark.	6.50	100.0	37.9	19.1	21.2	21.8	46.7
Baton Rouge, La.	7.27	100.0	7.0	11.9	53.8	27.3	42.5
Oklahoma City, Okla.	7.12	100.0	6.7	26.9	48.0	18.4	63.2
Austin, Tex.	7.61	100.0	14.6	48.6	29.9	6.9	45.8
Dallas, Tex.	7.36	100.0	14.8	50.2	25.1	9.9	34.3
Wichita Falls, Tex.	7.50	100.0	14.8	43.0	36.1	6.1	47.3
Mountain							
Butte, Mont.	7.95	100.0	49.3	29.9	5.2	15.6	42.8
Boise, Idaho	7.43	100.0	20.2	38.5	27.3	14.0	27.3
Casper, Wyo.	7.03	100.0	17.0	30.6	25.9	26.5	33.1
Pueblo, Colo.	6.67	100.0	21.4	26.5	23.8	28.3	46.1
Phoenix, Ariz.	7.57	100.0	43.5	26.2	18.3	12.0	41.8
Salt Lake City, Utah	7.14	100.0	25.6	21.5	36.4	16.5	43.8
Pacific							
Seattle, Wash.	6.67	100.0	22.0	30.1	29.5	18.4	41.2
Portland, Ore.	6.21	100.0	19.7	22.4	28.2	29.7	35.0
Sacramento, Cal.	6.70	100.0	21.4	26.2	32.4	20.0	23.0
San Diego, Cal.	6.86	100.0	36.6	26.8	24.9	11.7	27.7

* Data for each of the first and last columns of this table are based on substantially equal numbers of reports. Data on term of loan are frequently based on a much smaller number.

do a large proportion of the lending, while the loan term averages longer where building and loan associations are the more important sources of credit.

On January 1, 1934 most loans had the greater part of their terms yet to run, the expired years averaging 3.7 years in 10 cities as compared with 5.3 years as the average remainder of the term. These proportions reflected the preceding building boom with its attendant expansion in financing.

III. Relation of Income to Housing

In carrying out its purpose to show data on all principal factors of the housing question and their relationships, the Financial Survey obtained and tabulated family incomes reported by nearly 300,000 owners and tenants for 1929, 1932, and 1933. In 1933 incomes of owners averaged nearly ⅓ more than for tenants, but 55% of the total fell between $500 and $2,000, and about 25% were below this range (Table VII).

TABLE VII. AVERAGE FAMILY INCOMES, FOR OWNER-OCCUPIERS AND TENANTS, 1929 AND 1933, AND PERCENT DECLINE FROM 1929 TO 1933

City and Geographic Area	Owner-Occupiers Average Income		Percent Decline 1929–33	Tenant Families Average Income		Percent Decline 1929–33
	1929	1933		1929	1933	
New England			%			%
Portland, Me.	$2,773	$1,842	33.6	$1,744	$1,290	26.0
*Nashua, N. H.	.....	1,453	.....	.....	1,251	.....
*Burlington, Vt.	.....	1,799	.....	.....	1,125	.....
Worcester, Mass.	2,784	1,907	31.5	1,686	1,221	27.6
Providence, R. I.	2,339	1,606	31.3	1,630	1,133	30.5
Waterbury, Conn.	3,086	2,073	32.8	1,742	1,223	29.8
Middle Atlantic						
Binghamton, N. Y.	2,421	2,019	16.6	1,694	1,408	16.9
Syracuse, N. Y.	2,450	1,507	38.5	1,665	1,082	35.0
Trenton, N. J.	1,917	1,174	38.8	1,317	902	31.5
Erie, Pa.	1,943	1,080	44.4	1,549	924	40.4
*Williamsport, Pa.	.....	1,076	.....	.....	787	.....
East North Central						
Cleveland, O.	2,463	1,391	43.5	1,757	1,138	35.2
Indianapolis, Ind.	2,899	1,821	37.2	1,896	1,289	32.0
*Decatur, Ill.	.....	911	.....	.....	694	.....
Peoria, Ill.	2,203	1,454	34.0	1,691	1,131	33.1
Lansing, Mich.	2,146	1,204	43.9	1,632	966	40.8
Kenosha, Wis.	1,855	959	48.3	1,378	803	41.7
Racine, Wis.	1,939	918	52.7	1,589	837	47.3
West North Central						
Minneapolis, Minn.	2,304	1,530	33.6	1,730	1,220	29.5
St. Paul, Minn.	2,060	1,469	28.7	1,454	1,056	27.4
Des Moines, Iowa	2,138	1,455	31.9	1,660	1,174	29.3
St. Joseph, Mo.	2,196	1,473	32.9	1,555	1,176	24.4
Springfield, Mo.	1,753	1,162	33.7	1,365	899	34.1
Fargo, N. D.	2,399	1,682	29.9	1,679	1,304	22.3
Sioux Falls, S. D.	2,283	1,545	32.3	1,635	1,229	24.8
Lincoln, Neb.	2,294	1,404	38.8	1,581	1,153	27.1
Topeka, Kan.	1,981	1,373	30.7	1,492	1,070	28.3
Wichita, Kan.	2,112	1,271	39.8	1,652	1,035	37.3
South Atlantic						
*Frederick, Md.	.....	1,404	.....	.....	968	.....
Hagerstown, Md.	2,064	1,315	36.3	1,312	920	29.9
Richmond, Va.	2,715	1,999	26.4	1,508	1,285	14.8
Wheeling, W. Va.	1,594	1,073	32.7	1,379	925	32.9
Asheville, N. C.	2,126	1,393	34.5	1,155	821	28.9
Greensboro, N. C.	2,915	2,000	31.4	1,462	1,217	16.8
Charleston, S. C.	2,454	1,927	21.5	880	734	16.6
Columbia, S. C.	2,315	1,737	25.0	1,015	812	20.0
Atlanta, Ga.	2,701	1,906	29.4	1,377	979	28.9
Jacksonville, Fla.	1,593	1,224	23.2	873	626	28.3

TABLE VII. (*Cont'd*) AVERAGE FAMILY INCOMES, FOR OWNER-OCCUPIERS AND TENANTS, 1929 AND 1933, AND PERCENT DECLINE FROM 1929 TO 1933

City and Geographic Area	Owner-Occupiers Average Income		Percent Decline 1929–33	Tenant Families Average Income		Percent Decline 1929–33
	1929	1933		1929	1933	
East South Central			%			%
Paducah, Ky.	$1,667	$1,134	32.0	$1,019	$680	33.3
*Knoxville, Tenn.	.....	1,248	.....	.....	900	.....
Birmingham, Ala.	2,267	1,211	46.6	1,385	769	44.5
Jackson, Miss.	2,703	1,707	36.8	1,250	899	28.1
West South Central						
Little Rock, Ark.	2,591	1,502	42.0	1,445	940	34.9
Baton Rouge, La.	2,153	1,532	28.8	1,371	1,061	22.6
*Shreveport, La.	.....	1,718	.....	.....	936	.....
Oklahoma City, Okla.	2,580	1,617	37.3	1,627	1,096	32.6
Austin, Tex.	2,070	1,534	25.9	1,450	1,168	19.4
Dallas, Tex.	2,564	1,712	33.2	1,751	1,233	29.6
Wichita Falls, Tex.	2,076	1,650	39.0	1,612	1,048	35.0
Mountain						
Butte, Mont.	2,257	1,155	48.8	1,732	986	43.1
Boise, Idaho	1,812	1,266	30.1	1,493	1,194	20.0
Casper, Wyo.	2,064	1,441	30.2	1,569	1,099	30.0
Pueblo, Colo.	1,570	933	40.6	1,290	783	39.3
*Albuquerque, N. Mex.	.....	1,713	.....	.....	1,366	.....
Phoenix, Ariz.	2,880	1,590	44.8	1,681	1,114	33.7
Salt Lake City, Utah	2,270	1,417	37.6	1,603	1,094	31.8
*Reno, Nevada	.....	1,906	.....	.....	1,482	.....
Pacific						
Seattle, Wash.	2,122	1,278	39.8	1,693	1,125	33.5
Portland, Ore.	1,994	1,218	38.9	1,423	905	36.4
Sacramento, Calif.	2,465	1,712	30.6	1,805	1,344	25.5
San Diego, Calif.	2,047	1,371	33.0	1,670	1,192	28.6

* Income shown for 1933 only.

The effect of the depression appeared in the decline of about ⅓ in incomes between 1929 and 1933. Tenants were relatively less affected than owner-occupiers, probably because of less dependence on entrepreneurial profits. The Survey showed that wages constituted 88% of owners' incomes and 92% of tenants' incomes. The decline was therefore largely explained by the further report that the family's principal wage earner had been employed only about 65% of full time in 1933.

Comparison of cities on the basis of the proportion of income used for rent shows that in 56 of 61 cities the ratio fell between 20 and 30%, with an average of 23.7%. The larger houses of the northeastern cities make relatively larger demands on income than do those in the West and South.

The Financial Survey offers for the first time information which shows the circuit of related factors involved in the urban housing problem. The original cost at the date of construction is shown in relation to the present value of the property after the intervening years of depreciation. Values and rents for homes are shown in relation to the income of the family occupying the unit. The method of acquiring homes and the extent of indebtedness assumed are shown as well as the sources and terms of the financing which make home ownership possible. Finally are shown the extent of delinquency for rent or mortgage payments whenever, for economic or other reasons, the factors of income and expense become unbalanced.

III. Air Express Service in the United States

By WAYNE L. McMILLEN*

PREVIOUS instalments of this article[47] have contained (1) analyses of the nature of air express traffic, its volume, weight, revenue characteristics, and time of movement; (2) rate comparisons with other competitive services, together with time differentials; and (3) costs of air express service. This third and last instalment will be devoted to a consideration of the demand for air express service and some proposals for its future development.

The Demand for Air Express Service

A word of caution is necessary at the outset when discussing demand for air express service under various conditions. There are two ways to approach the problem: (1) by basing estimates on past experience of air line operators, and (2) by a system of "intelligent guessing" based on opinions both by those operating and those using the service, along with experience in operating similar types of services. Because experience has been so limited, much emphasis must be placed on estimates by various students of the subject, and these "guesses" must be recognized as such; that is, they must be considered as merely stating probabilities.

Very often these estimates are far from correct. In commenting on the two attempts made in this country to establish all-express schedules, Mr. Scheetz states[48] that "each of these started with assurances that adequate traffic would be forthcoming, and each of these failed dismally because when the planes began to fly, the traffic did not materialize."

Mr. Monte C. Abrams, who conducted the survey for the Bancamerica Blair Corporation,[49] stated that the opinions expressed in thousands of questionnaires which he sent to those interested in air express service were of little value.[50] Chambers of commerce, boards of trade, and manufacturing companies furnished unreliable answers, for they seemed interested only in getting the planes to stop at their city. Potential traffic was greatly overestimated. Mr. Abrams also conducted a survey of possible volume of air mail in the West shortly after the first air mail law was passed. He states that no city or chamber of commerce supplied 1/10 the volume of air mail which the group had estimated would be available.

Keeping in mind the unhappy results of many former attempts to estimate the volume of available traffic under various conditions, one may now consider what seems to be some rather conservative estimates of the volume of future air express traffic under assumed rate policies and assuming well advertised and dependable service. The traffic can be conveniently divided into (1) "emergency" shipments and (2) "regular" shipments.

The Market for Emergency and "Special Class" Shipments. It has been estimated that about ¾ of all present air express traffic consists of emergency shipments.[51] These are the result

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[47] 11 *Journal of Land & Public Utility Economics* 266-277 (August, 1935) and *Ibid.* 368-380 (November, 1935).

[48] "Investigation of Air Express Possibilities"—Conclusions.

[49] A summary of this study was published in a series of articles in *Aviation* late in 1931 and in early 1932.

[50] Letter, February 11, 1935.

[51] Wm. A. M. Burden of Scudder, Stevens and Clark,

(*Footnote 51 continued on page 71*)

generally of unusual and pressing needs in the consignee's business. Over 1% of all parcel post shipments are sent special delivery and probably more than this proportion are of emergency nature. If 1% of all parcel post and ½ of 1% of all railway express were assumed to be in the emergency category, these shipments would provide a potential market for air express of about 15,000,000 ton-miles, which is 43 times the estimated emergency air express traffic of 1933. In spite of present high air express rates the traffic is growing very rapidly, for with this type of shipment the time element is more important than cost.[52] Here the limiting factor is more the lack of knowledge of the service than the high rate.

Mr. Burden estimates that the increase of these emergency shipments should be at least at the rate of 25% per annum during the period from 1934 to 1938, even at present high rates. This seems to be a very conservative estimate since air express traffic has been growing during the last few years at several times this rate.[53]

Very likely this increase in volume can be handled with present equipment where express is carried along with passengers and mail. But as long as such a great portion of air express traffic is contributed by these very urgent shipments, the service is destined to remain relatively unimportant in the general system of transportation. The great task of the air line is to develop a traffic in *regular* shipments in order to bring about a much greater increase in both volume and revenue.

The Market for New "Regular" Shipments. Apparently there has always been a place in our transportation system for an agency which furnishes speedier transportation. Goods may now cross the continent in the time it once took to travel to a neighboring city. Business has been progressively adjusted to this ever faster pace and it is possible that air transport will play an important part in maintaining this trend.

As was pointed out in the second instalment of this article,[54] the present high rates impose serious limitations on the development of regular (as opposed to emergency) traffic. While speed is very desirable and transcontinental train time is over five times that of air time,[55] yet few types of merchandise can bear an air express rate which is eight times the rail express rate, unless unusual conditions arise. However, with a downward adjustment of these rates, considerably more regular traffic may be expected to develop.

It is possible that new types of traffic

(*Footnote 51 continued from page 70*)

"Air Express in the United States." The following references to Mr. Burden's study are in summary of his survey of the fields for air express expansion.

[52] 1933 R.E.A. air express tonnage showed an increase of 181% over 1932 and 1934 showed an increase of 115% over 1933. (J. S. Gorby, letter, February 28, 1935.)

[53] The following table shows the resulting volume of such growth:

ESTIMATED GROWTH OF EMERGENCY AIR EXPRESS TRAFFIC

Year	Emergency Traffic (Ton-Miles)	Revenue at Present Rates
1933	350,000	$ 349,000
1934	595,000	590,000
1935	744,000	595,000
1936	930,000	744,000
1937	1,162,000	930,000
1938	1,453,000	1,162,000

The estimates for 1934 and 1935 have proved to be too low and those of the later years are based on these years, so the entire set of estimates will in all probability be too low. However, the probable ton-mileage for 1938, as shown in the table, is about 1c% of a very conservative estimate of the total "emergency" tonnage of parcel post and railway express combined.

[54] 11 *Journal of Land & Public Utility Economics* 368 (November, 1935).

[55] *Ibid.* at p. 373, Table XVII.

will arise which could not exist at all except for air express service; other traffic will be taken from the surface agencies. One of the most promising fields for development of new traffic is the long haul of perishables. Among these are expensive fruits, vegetables, fish and other sea foods, and cut flowers. While it is rather impractical to ship orchids and gardenias from the West Coast to industrial sections of the East by rail, yet this can be very successfully done by air, as it is only an 18-hour trip. While greenhouse culture is necessary for these flowers in the Northeast, this is not true in California and as a result gardenias sell at retail in Los Angeles for a fraction of the New York price. Thus it is felt that a decrease in the air express rate would create a substantial traffic in items such as these. New York City could consume enough orchids and gardenias alone to create a traffic in these items equal to ⅓ of all 1933 air express volume.[56] Other cities would consume their proportionate share. With lower air express rates many other flowers—such as carnations, acacias, camellias, and calla lilies—would be shipped from the West Coast. At least two of these kinds of flowers are shipped each month of the year. While some may be shipped by rail, the air-shipped flowers arrive in much better condition, and last longer in the hands of retailers and consumers.

Another potential market for traffic which does not now exist is newspapers and periodicals (news and financial). While a certain amount of these are now shipped a long distance, yet if it were possible for people at a great distance from where they are published to get these materials quickly after they are printed, many more would be shipped than are now, thus creating new traffic. For instance, it seems reasonable that, if it were possible for people on the Pacific Coast to be reading the *Wall Street Journal* or the *New York Times* 20 hours after they were published, many more of these papers would be shipped to the West Coast.

Similarly, other types of merchandise whose market would be greatly expanded by use of a speedier method of transport may be expected to supply new traffic if air express service is more widely publicized and more attractively priced.

Present Surface Traffic as a Potential Market.[57] Some contend that air express service will find its market almost wholly in new traffic which the new service will develop, that is, traffic which does not exist now, rather than in the diversion of any quantity of traffic from surface agencies.[58] It seems likely, however, that a portion of present surface traffic will be diverted to the air. Which of these views is correct will depend largely on the rate policy adopted by air express agencies. A much lower rate than the present one would seem almost inevitably to draw considerable traffic from the railway to the airway.[59]

The following paragraphs present an

[56] Burden, *op. cit.*

[57] Mainly railway express and parcel post.

[58] Mr. C. W. Frey, R.E.A., New York, interview, December, 1934.

[59] During 1933, 628,000,000 shipments were made via railway express, parcel post, and air express. Of these 15.6% were by railway express, 84.4% by parcel post, and a negligible portion by air express. While parcel post was used for nearly 85% of the shipments, yet those shipments comprised only 35% (1,390,000 tons) and rail express shipments 64% (2,540,000 tons) of the total weight. Parcel post accounted for almost 45% of all revenue. The average railway express shipment weighed 51 lbs., while that of parcel post weighed only 5 lbs. (The average air express shipment was 6½ lbs.) The light average weight of parcel post shipments is partly attributable to the fact that parcel post may not carry shipments over 70 lbs. in weight. If air express service could divert only 1% of the 1933 ton-mileage from railway express and parcel post ton-mileage, its volume would be increased 60 times (Burden, *op. cit.*). With a lower rate structure this possibility does not seem unreasonable.

attempt to arrive at the probable nature of the traffic to be diverted. About ½ of all railway express traffic consists of dry goods, millinery, and clothing. The remainder is made up of ice cream, cut flowers, fresh fruits and vegetables, laundry, newspaper print, plate matter for small papers, moving picture films, milk, cream, bread and other perishables, live animals, money, securities, drafts, notes, jewelry, valuable papers, etc.[60] Air express may be expected to attract only the most valuable of this traffic.

Of the clothing shipped by railway express the part that is most likely to be attracted to the airways is the most "highly styled" merchandise. Here the possibility of profit depends to a great extent on the rapid stocking of new models, on low inventory, and on quick turnover.[61] Most of this class of merchandise is manufactured in the East and it is estimated that a good proportion of this traffic to the Midwest and Far West can be diverted to air express by a rate of about 30 cents per ton-mile.[62]

The motion picture industry presents a good potential market for air service in transporting both newsreels and feature films. Obviously, the value of a newsreel varies directly with the shortness of the period between the time the pictures are taken and the time they are shown on the screen. The advantage of a couple of extra days' showing, made possible by air express, usually more than pays the extra cost of that service. A large part of the newsreels travel by air express even now. The extra cost of shipping by air averages only 3% of a week's rental,[63] thus the service is very profitable both to the film producer and to the exhibitor. While speed in the transport of feature films is not so necessary, the traffic in these is much greater and the extra speed of air express is often more than paid for by the advantage of showing the films earlier. After production in Hollywood most films are now sent by rail to New York for review and approval. The cast and set must be held ready for changes during this interval. Hence a shortening of this period would seem to justify the extra cost of air express. As a rule, two copies of the negative are sent to insure against loss; perhaps in future one copy may be sent by rail and the other by air. Finished films also may be shipped by air from the central developing laboratory to the distributing exchange, which in turn ships them by rail express to exhibitors in neighboring towns.

In an earlier paragraph the possibility of developing an orchid and gardenia traffic which does not exist at all was mentioned. However, at present, tons of cut flowers are travelling by rail, and these may well be diverted to air express if air rates are considerably lowered.[64]

A large potential market for regular shipments is also available in fresh fruits, vegetables, and sea foods. With air express it is possible to ship southern fruits picked in the morning so that they may be served in the North at dinner on the same day with very little spoilage. Spoilage in rail-shipped *ripe* fruits is surprisingly high. Fish, lobsters, etc., could be caught in the early morning

[60] Frank Quindry, "Air Express: Development and Services," 14 *Journal of Air Law* 145 (April, 1933).

[61] The price of a new creation is almost directly proportional to the speed with which it is placed on the market.

[62] Results of interviews by Mr. Scheetz.

[63] Burden *op. cit.*

[64] One leading flower firm now ships almost as much tonnage by rail as total 1933 air express volume in all items. With a considerable volume of traffic in perishables, it is entirely possible by use of dry ice to convert freight-carrying planes into refrigerated planes.

in the Atlantic and served on Midwestern tables at dinner the same day. Tree ripened fruit can be shipped rather than fruit picked green and expected to ripen en route. Fruits may then be developed to produce better flavor rather than a type which ships well.[65]

Another field for expansion of air express service is in the publishing business. It was pointed out that use of air express would probably increase the number of papers and periodicals shipped long distances and thus create a certain amount of *new* traffic. In addition, it is reasonable to assume that a more attractive rate would divert much traffic from the surface agencies, for the value of newspapers and certain periodicals depends on how soon after publication they reach the readers' hands. On the whole, European lines carry a much greater volume of newspapers than do American lines, partly because of the diversity of languages and the desire to get a late edition of a paper in one's native language. Air service makes it possible to place a Chicago paper in the hands of a reader 1,000 miles away on the morning of publication. This same Chicago paper may be in San Francisco about noon the same day it is published.[66] Similarly, the service would be of great value to such news magazines as *Time* and *News Week*, and such financial papers as the *Wall Street Journal*. At least air express might well be used for this traffic on very long hauls.

The field of finance provides a regular traffic in certain valuables. Among these are bullion, securities, corporation records, cancelled checks, and valuable papers. The value of air express service to this type of traffic is greater than to almost any other, except possibly newsphotos and certain emergency shipments such as medicine and some machine parts. The high speed possible by air saves interest charges in transit on bullion and securities. In 1933 imports and exports of bullion through the airways in England were valued at about $236,000,000. The weight of this bullion alone was probably nearly 285 tons or over ⅓ the total volume of air express hauled in America.[67]

At least 160 tons of securities are shipped from New York each year but air express is used very little, principally because of the irregularity of air transport and danger of loss. With a more regular service the part of this traffic which goes long distances, it seems, could well stand the present air rate. It is estimated that, in time, most cancelled checks will go by air where the distance is long, as will a great part of corporation records. In transporting financial items speed is much more important than cost, for their value is high relative to their weight.

Another potential user of air express is the automobile industry. In fact, many companies are already making considerable use of it. Chrysler Corporation is an instance in point.[68] Also the Cadillac Company urges service men to "use this new high speed service

[65] Winter strawberries, persimmons, fresh figs, cherries, asparagus, and alligator pears have a high per-pound value and are most able to bear high shipping costs. The price per pound of these foods ranges from 25c to 60c and a very low air express rate is necessary to make use of this agency profitable.

[66] Two hours are gained on account of time zones.

[67] Burden, *op. cit.*

[68] Mr. Matheny, Factory Manager, Parts Division, Chrysler Corporation, stated: "We have found this method [air express] of transportation very attractive and it has found much favor as far as our various dealers and distributors are concerned. Since its inception, this commercial traffic has grown to the point where it is no longer in the category of an accommodation or an indulgence, but is a rather necessary and economic feature of our service structure and a very important element in our endeavors to render our customer the best possible delivery . . . ." (Letter to the writer.)

when you need more speed . . . ."[69] Undoubtedly, large and expensive inventories in parts may be cut down considerably by use of air express. Where by using rail express the distributor must keep a week's supply of each kind of auto part on his shelf, it is necessary to keep only a one- or two-days' supply of a large number of these parts by relying on air express. Manufacturers of machinery of all types will probably find the same to be true in their business.

Without doubt many other industries will also find advantage in regular use of air express, especially if lower rates are offered. An important need is that of informing prospective users of the existence of this service. Conversation with business men shows that comparatively few of them even know that the service exists. Education of the public about the service should cause a great increase in its use.

Estimates of Future Volume of Air Express Traffic under Various Conditions

As was mentioned at the outset of this discussion, the problem of estimating future volume of air express traffic is extremely difficult and the results of these estimates must be taken only as intelligent guesses. They cannot serve as a basis for making heavy commitments in new equipment or for expanding express service on any grand scale. Nevertheless, it does seem that a conservative estimate justifies some experimentation with a revised rate structure, probably using obsolete equipment for the trial period. This should be done cautiously and on a small scale, probably on the route between New York and Chicago where traffic is heaviest. Losses may be expected for some time, pending development of a much greater volume and installation of new equipment. In consideration of the uncertainties which face the industry at present, few air line executives are inclined to embark on an experiment in the immediate future where loss seems likely for a time at least. Hence, expansion of express service will probably be postponed until the Federal Government has formulated a more definite policy toward air transport.

Mr. Burden's estimate of possible annual air express volume, assuming a 30-cent-per-ton-mile rate for regular shipments and assuming that the government policy toward air transport will enable air lines to make long-time plans, is presented in Table XX.

TABLE XX. ESTIMATED POTENTIAL ANNUAL AIR EXPRESS TRAFFIC VOLUME*

Division	Ton-Miles	Total Ton-Miles†
I. Emergency Traffic		1,450,000
II. Regular Traffic		
A. Financial		Small
B. Perishables		1,450,000
Flowers	170,000	
Fruit	1,280,000	
Sea foods	Slight	
C. Published Materials		630,000
D. Motion pictures		430,000
Newsreels	85,000	
Features	345,000	
E. Style merchandise		1,560,000
F. General		2,730,000
Automobiles	2,250,000	
Mail order	500,000	
GRAND TOTAL		8,750,000

*Source: W. A. M. Burden, *op. cit.*
†Estimate assumes a well coordinated, well advertised service, and a 30-cent-per-ton-mile rate, and is highly tentative.

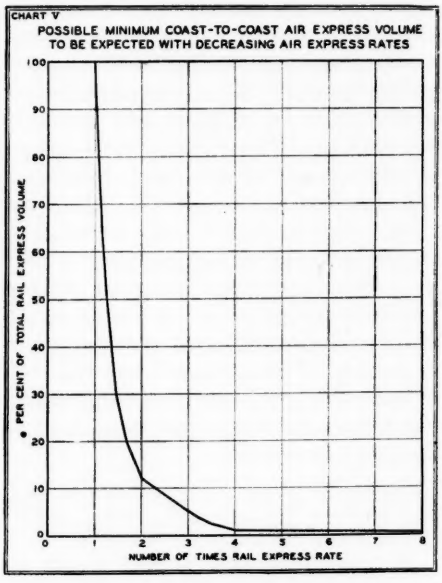
The estimate of possible *emergency* traffic was arrived at, it will be remembered, by forecasting an annual 25% increase in this traffic from 1934 to 1938. This seems to be very conservative in view of the much larger annual growth during the last few years. His estimate of potential volume in items comprising

[69] The Cadillac Co., *Service Man*, December 15, 1932.

more or less *regular* traffic also seems reasonable.[70] His estimate of the *total* volume of air express traffic in the United States, assuming a well coordinated, well advertised service at 30 cents per ton-mile, is 8,750,000 ton-miles or over 18 times the total air express volume of 1933, and about ½ the total ton-mileage in passenger traffic for the same year.[71]

After an extended study of air express service Mr. John F. Scheetz[72] made an estimate of the volume of traffic to be expected under various rates. His estimates were based on the results of a questionnaire sent to prospective users, and 100 personal interviews with prospective users throughout the country. One hundred and twenty-five replies to the questionnaire were received. The estimate was made *for only the transcontinental route* of the United Air Lines from New York to San Francisco. In order to make the estimate conservative he assumed rail express to be the only potential source of future air express traffic, ignoring the possibility of diverting traffic from other agencies and of developing new traffic which does not now exist. The estimates were made on the assumptions that a general knowledge of the available service exists and that the service is perfectly dependable, both of which are rather contrary to present facts. The results of his attempt to forecast traffic volume at various rates are presented on Chart V. The air express rate is shown as a multiple of rail express rates, and the volume of traffic is shown as a percentage of the rail express volume.[73]

CHART V



[70] An annual traffic of 1,280,000 ton-miles can be obtained in fruit and vegetables by a diversion of about 2% of the present rail shipments to only five of the larger cities in the Middle West and East. The estimate of traffic in published materials would equal only ½ of the volume of present rail traffic in the *New York Times* to Chicago, Los Angeles, and San Francisco, plus 10% of the volume of *Time* to all cities. This figure seems conservative, for all metropolitan papers would use the service (and not to three cities only but to all other major centers), and many news and financial periodicals besides *Time* would use the service. It is estimated that 70% of all newsreels will move by air, even without a rate reduction. One-fourth of the Hollywood-New York traffic in feature films and ¼ of the traffic from developing laboratories to distributing exchanges are estimated as the amount to be diverted to the airways. Department store traffic men on the West Coast estimated they would use air express for about ¼ of the shipments of highly styled merchandise from New York. In making his estimate of the total traffic in these goods in the United States Mr. Burden has taken ¼ of the rail shipments from New York to only four cities—Chicago, Portland, San Francisco, and Los Angeles. Thus this estimate should be conservative enough. Under the heading of "general" he has taken conservative estimates of the possible air traffic of only two industries—the automobile and mail order businesses. When one considers that hundreds of other industries might use the service, this estimate seems sufficiently low. The difficulty with former estimates, it has been pointed out, is that they were entirely too optimistic. It does not seem that Mr. Burden has erred in this direction.

[71] Assumes average passenger plus baggage weighs 200 lbs. Using this average, passenger traffic in 1933 was 18,400,000 ton-miles (Statistics from Areonautical Chamber of Commerce of America).

[72] Of McCann-Erickson Advertising Agency—"Investigation of Air Express Possibilities."

[73] At an air rate of four times the rail rate a volume

(*Footnote 73 continued on page 77*)

If Mr. Scheetz's predictions are correct, it certainly would not be very profitable for air lines to reduce their rates merely to ½ the present level, for they would receive the same revenue as they do now but would have to haul twice as much tonnage. Thus from the standpoint of net income to the air line the rate might better remain considerably above four times the rail express rate or else be reduced very drastically to a point much below four times the rail rate. Judging from the two estimates here examined it seems the latter policy would be by far the better. Assuming that a rate of 30 cents per ton-mile will attract an annual volume of 8,750,000 ton-miles per year, at a cost of not more than and probably less than 25 cents per ton-mile, the net profit from this traffic (about $440,000) to the air line would be about as much as the total gross revenues of 1933, and the public would be provided with a new and faster method of shipping its merchandise. This conclusion is based on Mr. Burden's estimate which was found, in an earlier part of this discussion, to be conservative. A still greater volume of traffic can undoubtedly be drawn by a classification of rates, which will be discussed in later paragraphs.

A Proposed Policy for Development of Air Express Service

Organization. The air express traffic of all American air lines should be handled *under one system.* It is recommended that this be done either: (a) by formation of a new corporation jointly owned and controlled by the air lines, possibly using the pick-up and delivery service of the Railway Express Agency, or the telegraph companies, or both, in cities where the traffic will not support a separate organization for the purpose; or (b) by all air lines joining the Air Express Division of the Railway Express Agency in providing the service. The lines would have a contract with the Railway Express Agency, whereby the latter is to provide the pick-up, delivery, and ground handling services in the most efficient manner, and to receive as compensation the out-of-pocket costs of these services plus a percentage of the revenue remaining after this deduction for overhead costs and profit. In view of the potential danger of a conflict of interests between the railroads and the air lines it is recommended that control of air express rates be placed with the Interstate Commerce Commission, if the Railway Express Agency is to handle the air express traffic of all lines.

Regardless of the method used, the urgent and immediate need is that one system should handle all air express traffic.[74]

Rates. It is recommended that in order to expand the service, air express

(*Footnote 73 continued from page 76*)

of 1% of the rail volume is to be expected; at a rate of 3.6 times the rail rate, a volume of 2% of rail express volume is to be expected; and at a rate of 3.2 times rail rate, a volume of 3.6% of total rail express traffic is estimated. Air rates of three times rail rates will divert nearly 5% of the railway express volume. At a rate equal to the rail rate, theoretically all rail express traffic will be diverted to the airways. (It is to be remembered that these figures are based *only* on the coast-to-coast traffic.) A rate of twice rail rates, according to Mr. Scheetz's chart would divert about 12% of the traffic from the railway express service. Expressed in another way, a decrease in the rate from the present level to about ½ or to about four times rail rates, would yield a 100% increase in 1933 air express traffic. To decrease the rates to about 3.5 times rail rates would bring an increase in 1933 traffic of about 250%. A 500% increase over 1933 may be brought about by decreasing the air rate to three times the rail rate, according to Mr. Scheetz's estimates.

Because these estimates are based on coast-to-coast distance it is impossible to make a worth while comparison with the estimates of Mr. Burden which were made a year later.

[74] Since this was written negotiations have been completed to consolidate all the traffic under the Air Express Division of Railway Express Agency as suggested.

rates be drastically reduced. However, in view of the lack of a definite governmental policy toward air transport, the air lines hesitate to add to their capital investment, which is necessary if express rates are lowered. The lowered rates, however, when the time comes for expansion, should be classified according to type of commodities hauled. The proposed classification provides for:

1. A "*Special*" *Class* for items making up the bulk of present traffic, to pay approximately the present rates, and to be carried on passenger planes.[75]

2. *First Class* items including in large part industrial products moving away from industrial centers and all products not specified in the other classes. This class of items is to pay a rate of from 2½ to 3 times the rail express rate (or between ½ and ⅛ of the "Special" Class items).

3. *Second Class* items including perishables moving mainly toward major centers, paying a rate of about 65% of that of First Class items.

4. Special low *commodity rates* in case there is a shortage of traffic moving toward major centers. These rates are to apply to certain specific items that cannot bear the second class rates and it is suggested that they be about 50% of the First Class rates.[76]

Inasmuch as the present rate on the bulk of present emergency traffic would not be disturbed, the existing revenue on this traffic would be decreased very little, and with the almost certain large increase in volume of regular traffic and revenue under the classified rates, the net revenue to the air lines should be increased considerably. Doubtless adjustments in the proposed rates would be necessary from time to time.

Competition. It has been urged that all express traffic should be handled by one system. The proposal is advanced that air express rates should be regulated by the Interstate Commerce Commission to prevent the breaking down of the proposed classification by any competition for air express traffic which later may arise from a possible inauguration of another express system. Regulation of rates was shown to be especially desirable if the traffic is to be handled by the Railway Express Agency. It is proposed that competition among air lines be regulated by some such agency as the Interstate Commerce Commission. Certificates of convenience and necessity should be required of any air line using the government airways. Not more than one should be granted a certificate on any route unless the new applicant shows that its service is desirable and justified before it receives a certificate. The very real and keen competition with surface agencies of transport can be relied upon to give the public the benefit of the advantages of competition and alert management. This control of air line competition would prevent the division, among several lines, of traffic which will hardly support one line.[77]

Exclusive Express Schedules. Perhaps

[75] Among the items to be placed in this class are: (a) valuable papers, (b) advertising and printed matter, (c) news photos, (d) films, (e) bullion, (f) securities, (g) jewels, and (h) other valuables.

[76] These *classified* rates would probably bring a much greater volume of traffic than contemplated by Mr. Burden or Mr. Scheetz, both of whom assumed a flat ton-mile rate for all items.

[77] Since this was written the Air Mail Act of 1935 has been passed, controlling competition between air lines somewhat as suggested above. Section 15 of the Act reads, in part: ". . . . . after June 30, 1935, no air-mail contractor shall be allowed to maintain passenger or express service off the line of his air-mail route which in any way competes with passenger or express service available upon another air-mail route, except that off-line competitive service which has been regularly maintained on and prior to July 1, 1935, and such seasonal schedules as may have been regularly maintained during the year prior to July 1, 1935, may be continued if restricted to the number of schedules and to the stops scheduled and in effect during such period or season." Here the control is not in the hands of the I.C.C. but in Congress and the Post Office Department.

the least expensive way of handling an expanded air express traffic is through the use of larger passenger planes with larger cargo-carrying capacity, carrying express along with passengers and mail. However, if *exclusive* express schedules are flown, because large enough passenger planes are not available, the specially designed cargo plane is likely to be less expensive than any type of passenger equipment. Use of the obsolescent passenger plane is the least desirable and the recommendation is that it be used only for purely experimental purposes.

Educational Publicity. When it has been decided to expand the air express service, much attention must be given to publicity, advertising, and other sales effort, for the general public is very poorly informed concerning the service.

The publicity and sales effort should be directed primarily toward the consignee, for as a rule he pays the charges and directs the shipper as to how shipment is to be made. The effort should be then to educate the very large number of consignees rather than a few large shippers.

All media should be employed, such as (a) news columns of the papers, (b) the advertising of users of air express, (c) air line advertising, and (d) direct sales effort.

Subsidy.[78] Although in this article no thorough study was made of the question of subsidy, yet the evidence presented by those who have studied the subject[79] seems to show that, for proper development of air transport as a whole, a subsidy is desirable for some years to come.

It is recommended that provision of the airways by the Federal Government and the airports by municipalities should continue indefinitely, and that the payments for transportation of air mail of a sum greater than postal receipts therefrom (or a direct federal subsidy) should continue until such time as the Interstate Commerce Commission decides that the business is able to stand on its own feet.

Because one of the greatest defects of the service is its lack of dependability, attributable mainly to inability to fly in bad weather, it is urged that the Federal Government push as rapidly as possible the installation of blind landing devices on all federal airways. This is desirable from the standpoint of passenger and mail traffic as well as air express. Use of these devices should enable the air service to approach the regularity and dependability of railroad transportation.

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[78] In this study air mail subsidy is defined as: "Government pay to an air mail contractor of an amount exceeding the postal revenue derived from the route involved." Under this definition the two air lines carrying nearly 65% of all air mail are not at all subsidized by the Post Office Department. Economic justification for many of the light traffic routes is debatable.

[79] Dr. John Crane, the Federal Aviation Commission, and the Interstate Commerce Commission.

Urban Land Department

MORTON BODFISH, *Editor*

"Undoubling" of Families and the Demand for Housing Units

WITHIN the past few years some attempt has been made to measure that part of the potential demand for housing which is expected to become effective with the lessening of economic pressure. The number of "extra families" reported in the Real Property Inventories of the Bureau of Foreign and Domestic Commerce and in many similar surveys became, almost immediately, a pat explanation of abnormal vacancies in cities or were used to forecast a demand for housing limited only by the supply of available ground.

The wide use of these figures made it evident that some tests should be made of the reliability of the data. During January, February, and March, 1935, the Federal Housing Administration in conjunction with the Federal Emergency Relief Administration carried on a housing survey in Martinsburg, West Virginia. One of the questions included on the schedule concerned "extra families" and was identical with the one used in the Real Property Inventories. It was decided in April, 1935 to re-enumerate those dwelling units reporting "extra families" in the first survey. The circumstances surrounding this investigation afforded opportunity for a reasonably well controlled experiment. It was felt that such a study would not only test the validity of the number of "extra families" reported but would also reveal information concerning the nature and characteristics of such families.

"Extra families" were defined in the various Real Property Inventories as those who, if conditions improve and jobs are available, will require separate dwelling units of their own. No doubt this method of measuring housing demand was founded upon logical bases. The definition of "extra family" narrowly limited this type of family to one which was living doubled up with some other family and which would like to have a dwelling unit of its own if it were able.

Of the total number of "extra families" reported in the Real Property Survey of Martinsburg only 27.7% were determined to be part of the probable demand for housing at the time the survey was originally made, according to the information subsequently obtained in the intensive study. Excluding those families which had moved between enumerations, those dwellings which could not be located, and those units refusing additional information, 28% had been enumerated incorrectly as doubled up families and 54% did not have reasonable economic prospects of undoubling or did not wish to move into separate establishments.

These data would seem to support a contention that, although the question used in the Real Property Surveys was designed specifically to include only those doubled up families who were part of the probable demand for housing, it failed to do so. This is not a criticism of the "extra family" question as it was worded but of the technique employed in arriving at the desired estimate of housing demand.

The technique used involved an objective answer based purely upon rationalizations of subjective criteria. If you had a million dollars, would you buy a 16-cylinder automobile? If, when an "extra family" was reported, enumerators had made further inquiries regarding the family's economic prospects, how long it had been doubled up, whether the two families lived together through choice or economic necessity, it might have been possible to have determined if this was an "extra family" in accordance with the intent of the question originally asked. Moreover, it is likely that many enumerators merely said, "Are there any 'extra families' living here?" If more than one family was living in the dwelling unit, they probably received a positive answer. Hence, the published figure for potential housing demand increased by one.

A more rational approach to the problem of estimating potential housing demand from

the data concerning those families who have doubled up is to obtain answers to the following questions. How many families normally live with another family? How much doubling up has taken place since 1929? At what rate do combined families tend to undouble? What sized units will be needed? How much can people pay for dwelling accommodations?

The schedule used in this study of the "extra families" reported in Martinsburg was designed to answer some of the above questions.[1] It is felt that the data are reasonably accurate since the actual field enumeration was done by the author and two skilled assistants. Because of the small sample (148 families) no attempt must be made to generalize from the data presented but findings are set forth simply to demonstrate what might be expected in a similar but more extensive study of the same problem.

Many families normally live together and therefore are not likely to enter into the demand for housing to the same extent as those families who are forced to double during periods of economic stress. Of the "extra families" studied 25.6% were doubled prior to 1930. Of these families, in turn, 17.5% had at one time maintained separate dwelling units and 50% had not.

On the average, "extra families" had been doubled up for a period of 4.7 years; that is, the early fall of 1930 was the point at which the mean fell. Families having units of their own at one time averaged 3.5 years duration of present living status and those not having such accommodations averaged 6.4 years.

During the period which intervened between the two enumerations, it was found that 6.8% of the "extra families" reported in the first survey had already undoubled. As the original survey covered a period of three months, this number of families undoubled within four months of the first enumeration.

Of the "extra families" studied 61% were found in owner-occupied and 39% in tenant occupied structures. Probably more doubled up families were found in owner-occupied structures because many young couples upon marriage move in with either of the couple's parents. This is supported by the fact that 62% of the "extra families" found in owner-occupied structures had never had dwelling units of their own as against 37% in tenant-occupied structures.

"Extra families" were found in all rental and income groups. They did not tend to be concentrated in any one stratum but were dispersed throughout social and economic groups in the community. The most common rental group for all dwelling units in Martinsburg was $10.00 to $14.99. Most "extra families" were found in the group renting from $15.00 to $19.99.

Three-person families predominated in the size of doubled up families. Size was distributed as follows: 3-person families, 37%; 2-person families, 35%; 4-person families, 17%; 5-person families, 9%; 6-person and over families, 2%.

The predominant combination of "extra families" was husband, wife, and one child, which composed 35% of the total. The combination of husband and wife with no children was found in 27% of the cases.

These families living together were most often found to have three persons in the "extra family" and two persons in the principal family. It was notable that, on the average, the "extra families" contained more persons than the principal families.

In 65% of the units studied there was either a son or son-in-law relationship between the head of the "extra family" and the head of the principal family. In the owner-occupied units 75% of the families had this relationship. Only 5% of the families living together were totally unrelated.

Eleven per cent of the "extra families" had no income for the week immediately prior to the enumeration, that is, the week ending April 6, 1935; a third (33%) of the families had an income for that week ranging between $10.00 and $19.99; 35% had more than $20.00 income; and 10% had less. The remaining 11% gave no report on income.

It was assumed that "extra families" would be satisfied with certain inconveniences in order to maintain themselves at a given standard of living. A further assumption was that families would not undouble until they were able to move into dwellings located at least in the same or similar neighborhoods. Thus, the standard of whether a family was economically able to undouble was set at whether its weekly

[1] Space precludes reproduction here of the schedule used in the "Intensive Dwelling Survey." Copies may be obtained, however, from the Division of Economics and Statistics, Federal Housing Administration.

income equalled 75% of the monthly rental of the present dwelling unit. It was also assumed that smaller dwelling accommodations could be had at the same level for approximately 25% less and that monthly rental should equal one week's income. Fifty-one per cent of the families studied met this test.

All families able to undouble are not part of the demand for housing since many of them did not wish to move into separate quarters or were unable to do so because of either illness or dependents. Only 55% of the families economically able to undouble desired quarters of their own and but 45% were unencumbered by dependents or sickness.

Of those families who had been doubled two years or less, 60% wanted units of their own. Of those doubled for a greater period, but 42% wanted separate establishments.

It was discovered that the greatest probable demand was for units to accommodate 2- and 3-person families ranging in rental from $10 to $30 per month, with most units renting from $15 to $20.

The technique employed in the various Real Property Surveys to estimate housing demand from the source of doubled up families gave a picture so beguiling that one was likely to forget it was a jigsaw. Data presented here indicate the extremely complex nature of "extra families." Their probability of undoubling varies widely with income, the time the families have been doubled, whether they live in tenant- or owner-occupied structures, their relationship to the principal family in the unit, and with many other factors. The author believes that, if similar studies were made in other communities, the same complexities would be uncovered even though relationships would vary.

It is hoped that this brief account of the Martinsburg experiment will create a degree of doubt in the minds of those persons who are complacently willing to accept the number of "extra families" reported in various housing surveys as being the demand for housing from that source without considering that not sufficient data were obtained upon which to base a rational judgment.

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Realism versus Real Estate in Housing

THE United States Government embarked upon a low-cost housing program in the belief that it was one of the most useful forms of public work. So many difficulties have beset federal undertakings in these lines in the course of reaching the present state of construction that the significance of public housing as a means of creating employment has diminished markedly and attention has turned to the development of a more permanent program divorced from work relief.

This possibility of making housing something else than an emergency measure has stimulated both proponents and opponents of a public program to rush into print with a series of claims and counterclaims. Most articulate of the opponents are the various organized groups in the real estate business.

The criticism of a public housing program by these interests is likely to have little value for two reasons. (1) A belief that they are defending their own livelihood from unwarranted encroachment of government usually precludes acceptance of facts which are apparent to less partisan interests. (2) Not only are certain facts ignored but, in a desire to prove the whole philosophy of public housing faulty, the various weaknesses or errors of the present undeveloped federal program are cited as conclusive evidence that direct government activity is a mistake. A good example of opinion thus clouded by individual interest is the article entitled "Private versus Public Enterprise in Housing" by Walter S. Schmidt in the November issue of the *Journal*.[1] The very use of the word "versus" in the title indicates that the author has assumed that there must be an inherent conflict between private and public enterprise in housing. Mr. Schmidt further infers that public housing is being advocated mainly by a group of wishful thinkers without due regard for realities.

One is tempted to ask what action, realistic or wishful, his constituents have taken toward rectifying the situation which his own presentation of facts reveals as an

[1] Vol. XI, pp. 342-51 (November, 1935).

appalling problem. Certainly the proposal of the thoroughly discredited theory that low-income groups will receive decent housing by filtering up into housing discarded by the more fortunate can hardly be considered a helpful contribution. The unpromising results of several hundred years' application of this theory are all too evident today. There are few examples of private enterprise having faced the low-cost housing problem with the realism which has marked public action, however faulty, to date. Those engaged in the difficult administration of a public housing program would be the first to welcome any demonstration that private enterprise can successfully handle the responsibilities now undertaken by the government.

Private enterprise has proposed various changes which are aimed to solve the low-cost housing problem without departing from "sound American business principles." The proposals include research, lower interest rates, lower labor costs through stabilization of building construction employment, pre-fabrication, large-scale housing projects, a central mortgage bank, reduced real estate taxes, and more effective city planning. Although all these proposals have not been tried out in any one project, enough is known about each to permit reasonable estimates of their single or joint effect in reducing housing costs. Research is perhaps the least easily evaluated and certainly the most overstressed of possible improvements. At its best, government-sponsored research can be a medium for initiating and coordinating inquiries which might otherwise be neglected or confined to narrow private business interests. It is a commendable effort and should be encouraged, but cannot be expected to produce immediate or sensational results. The effect of lower interest rates on housing costs not only can be definitely computed, but has been tried in the case of both loans to limited-dividend companies at 4% and direct government housing at 3%. In both cases the resulting rentals have been criticised as too high.

The possibility of lowering wages in building construction is very remote unless the government exercises control over business to an extent which would make the late NRA and AAA appear as mere child's play. Prefabrication has not developed anything better than a $5,000 house to date. Recent investigation of new materials and methods of construction by three federal housing agencies has failed to reveal any possible economies which are large enough to offset the need for government subsidy. Large-scale operation has been the rule rather than the exception in government projects. Actual bids from contractors have shown no reduction in the costs which were known beforehand to be too high to permit low rents. The proposal for a central mortgage bank adds to the advantage of lower interest the advantage of increased liquidity of real estate mortgage paper, yet under the most perfect of administrations such an institution could not possibly maintain housing credit at less than 3% and still be self-liquidating.

Real estate interests propose lower real estate taxes as a method of bringing low-cost housing within the field of private enterprise. This proposal finds hearty support among housers with two qualifications: (1) that it not be a reduction in the form of a blind, overall tax limitation without providing for revenue necessary to supply the services which the public demands; and (2) that tax reduction not be considered as eliminating the need for further direct public aid and subsidy in housing. In support of this second qualification, one has merely to examine the as yet unsatisfactory proposed rents in the PWA housing projects which are favored both with subsidy and with taxes of about ⅛ the usual assessment for similar buildings in private ownership.

Last in the list of proposals is a suggestion for more effective city planning and zoning as related to housing. This is probably the least explored of possibilities and its sincere endorsement by real estate should be a signal for housers, planners, and zoners to take a new lease on life. In a long-term housing program positive planning and zoning control based on logical present and future land use offers a real opportunity for reducing housing costs. When real estate and other private interests are ready to begin writing off paper values and reclassifying land according to its probable best use in the interest of public welfare, they will find a warm welcome written on the city hall doormat. In the meantime, low-cost housing projects must often be fitted into the city plan so as to affect least adversely the status of existing "values." This process does not make for lowered housing costs.

In short, those who would have us believe

that low-cost housing can be provided on either a profitable or self-liquidating basis are either ignorant of the real cost of such housing or are guilty of the most unsubstantiated idealism. No private group, real estate or otherwise, can be accused of unique ignorance regarding the true cost of decent housing. In fact, public housing agencies themselves had absurd misconceptions which have been dissipated painfully during the last three years. On the whole, public officials charged with administering housing programs have been very loathe to accept the proof that large public subsidies were necessary to house a portion of our population. They recognize the psychological, social, political, and economic dangers in a public housing program, yet they choose to face it as an unfortunate and immediate necessity in our national life, rather than to postpone action on the basis of false hopes for reduction in housing costs and increase in income levels.

There is an unfortunate tendency to confuse the issue with matters of political policy. Thus those who prefer to avoid considering the merits or weaknesses of the public housing movement on a rational basis will quote the precedent of antiquated ideals and claim that the acceptance of public enterprise in housing is synonymous with the acceptance of communism, fascism, or socialism as a form of government. It is interesting to note that public housing has been accepted over a longer period of years and with more beneficial results in countries which have a democratic rather than a dictatorial, socialistic, or communistic form of government. Public housing experience, especially in England and Holland, demonstrates that the question to be faced today is not that of private versus public enterprise in housing, but rather the question of how best to combine the two in a manner most conducive to the general welfare of the country.

There is no denying that real estate interests have been blamed unfairly during the past few years for our housing ills. Although that business has a rather uncomplimentary past to live down before it can achieve its aspiration to be regarded as a recognized and honored profession, even with the most nefarious motivation, it could not have been responsible for all our present woes. Poor general land policies, lack of any reasonable control over city growth, an increasing disparity between incomes and the cost of good housing, and a blind hope for escape from old failures by flight to new enterprises have been largely responsible for the problem. The real estate operator has profited tremendously from the prolonged debauch of urban land development, but he was seldom much more of a scoundrel than others who acquiesced in the system and also profited inordinately thereby. He is now in the unhappy position of personifying past mistakes committed both by his predecessors in the real estate business and their contemporaries. Furthermore, forces contributing to the problem are far too powerful and remote in origin to be substantially altered by any current efforts of the most superorganized real estate groups. Solution to the difficulties which most urgently demand public attention will not be found in by-words or slogans or the stimulation of the desire for ownership among classes who cannot afford to rent decent quarters even in a depressed real estate market. On the contrary, some of the causes of the problem can be attributed to the unregulated exercise of that great American "urge" which commercial operators believe will place any deserving family in possession of a suitable house in the suburbs.

The government has been accused of some malicious plot to crush the spirit of home ownership in America. Can this be true of an Administration which has spent $6 to help owners retain homes to every $1 that it has spent to provide rental accommodations? Is it a disservice to America for the government to make available the facts about the actual cost of decent housing as an antidote to the emotional appeal which has marked most home shows and the salesmanship which has led many families to lose both life savings and home in some ill-advised venture into ownership?

Criticisms of the government's present public housing program can be made easily, but these criticisms do not disprove the need for a better program nor the possibility of evolving one. Creation of widespread intelligent opinion in a short time is not to be expected. However, when it finally develops, those who are so shortsighted as to judge the welfare of a nation by prospects for profit in their own particular livelihood are likely to find themselves as embarrassed

as would one of their idealized pioneer fathers should he attempt to hew out his individual destiny in the assembly line of the Ford factory.

EDMOND H. HOBEN
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Mr. Schmidt's Rejoinder

MR. Hoben's article does not in my judgment answer in any particular the article on housing which I recently contributed to the *Journal*. As a matter of fact, he comes to the same conclusion that I did—namely, that the present federal program is immaturely conceived and has failed. His concluding paragraph grants that a new program must be developed.

This is the identical conclusion to which I came in my own article. There are serious objections to the means taken by government to replace dilapidated housing. Those in the real estate business have given years of thought to the subject and have a wealth of experience from which to draw conclusions. Mr. Hoben would, by his statement, exclude those in the real estate business who know the subject from any part in developing that program. This attitude, unquestionably, is one of the reasons that the present program has failed.

Mr. Hoben asks what has been done by the realty interests of the country toward bettering the situation. The census figures show that between 1910 and 1930 some 7,600,000 new living units were created, the average cost being somewhat under $4,000. These units house some 36,000,000 people. Our investigation discloses that almost 80% of the new urban housing is built by operative builders for unknown purchasers. The real estate interests of the country, therefore, in a practical way, have done a stupendous piece of work in this matter. Despite the fact that some of this housing was constructed by irresponsible builders, yet, generally, the new construction was sound and attractive, and, to my personal knowledge, was sold without undue profit to the builder. This is an orderly process and should be continued.

I am unwilling to admit that the citizen has the right to demand that government supply him with housing any more than with food and clothing. Government has the distinct obligation to give the citizen, willing to work, an opportunity to earn sufficient to give reasonable comfort of existence. In this respect of giving economic direction to accomplish the result outlined, government has been woefully deficient.

I am also unwilling to grant that there is any logic in giving to those in the lower wage groups fine new housing. I have been through various new federal projects and can say, with assurance, that the quarters provided are better than those of the average person who must pay for them through taxation.

Government is not showing to private enterprise the way whereby it can supply the deficiency in housing. In the Techwood project in Atlanta, after a 45% subsidy is given and a charge of only 3% interest, the rent which must be obtained is $5.50 per month per room, without electric service. Poor people cannot afford this rent. Here is a project, therefore, which through cash subsidy and low interest rate is really subsidized to the extent of 70% and yet is beyond the means of those in the low wage groups. Why then a tirade against builders for not building such housing? Certainly we must be rid of slums but, at the same time, we must avoid damage to private enterprise that always comes with hasty action. People have a right to defend their properties and their businesses, and there is no reason to condemn entire classes because they make that attempt.

If we are to overturn the whole scheme of things in this country and have government supply the citizens with food, clothing, and housing, and conduct all business, then let us do so frankly and openly by placing the issue fairly before the people.

WALTER S. SCHMIDT
Past President, National Association of Real Estate Boards

The United States Supreme Court Rules on Conversion to Federal Savings and Loan Associations

ON December 9, 1935 the United States Supreme Court rendered a unanimous decision on what were commonly known as the Wisconsin conversion cases.[1] Three savings and loan associations under state charter had attempted to convert to federal savings and loan associations in the manner provided for under Section 5 (i) of the Home Owners' Loan Act. Confining itself to the narrow question presented—namely, could a state chartered association convert to a federal savings and loan association in the absence of enabling legislation by the state and over the protest of the State of Wisconsin—the Supreme Court held that Section 5 (i) was trespass on the powers of the State under the Tenth Amendment. The Court recognized the powers of the State over associations and one item of particular interest in the opinion was the definite restatement of the status of savings and loan associations as quasi-public institutions.

Federal savings and loan associations were provided for in the Home Owners' Loan Act of 1933 to furnish additional thrift and home financing facilities. At the time of passage of the Act approximately ½ the counties in the United States were not afforded a means of home financing through any type of local institution. While at first blush this seems to be rather an astounding fact, the 1,500 counties referred to contain only about 18.2% of the population. The new associations, by mandate of the law authorizing them, were to be operated according to the best practices of local thrift and home financing institutions—namely, the savings and loan associations. The type of amortized long-term loan and the investments which federal savings and loan associations offer to the public coincide with the plan of state chartered savings and loan associations which have been in existence for over 100 years.

At the time of the Supreme Court decision there were in existence 599 new federal savings and loan associations and approximately 300 state chartered savings and loan associations, which had converted to federal charter but which were not affected by the decision since they were located in the 37 states already having enabling legislation. The decision, therefore, affects only the three appellants directly, and indirectly all associations which may attempt to convert in the 11 states having no enabling legislation. The Supreme Court did not specifically rule upon the constitutionality of or the right of Congress to provide for federal savings and loan associations as such; it did, however, raise the question without definitely answering it.

It is not expected that this ruling of the Supreme Court will result in grave economic consequences to home financing. Savings and loan associations, both state and federal, are now making considerably more loans than a year ago and the trend of lending is upward. This is attested by the fact that in the month of November total estimated loans made amounted to $78,916,000, of which $68,589,000 were made by state chartered associations and $10,327,000 by federal associations. Since 1933 state chartered associations have been considering legislation which would allow them to convert to federals and most of them have made their final decisions. Many state laws have been changed wherever necessary and now the operations of both federal and state institutions are quite similar. State chartered associations are eligible for share insurance. The Home Owners' Loan Corporation may purchase shares of both state and federally chartered associations wherever the demands of the community necessitate additional home financing.

H. GOODSITT

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[1] *Hopkins Federal Savings and Loan Assn., Reliance Bldg. and Loan Assn., Northern Bldg. and Loan Assn. v. Peter A. Cleary, et al.,*— U. S. —, October term, 1935.

Land Resources Department

GEORGE S. WEHRWEIN, *Editor*

Reconciliation of Land Uses

DOUBTLESS the most fundamental principle of land economics is that of reconciliation of uses. The primacy of this principle, however, has not been generally recognized, even in theory, while in practice it is constantly disregarded, with most unhappy results.

The practical application of this basic principle is most widely illustrated in the practice of agriculture and in forest administration. The farmer almost instinctively endeavors to use his entire land holdings to their fullest capacity. In this effort he uses one area for pasture, another for orchard, and another for woodlot. Or, if he thinks best, he will use his woodlot for timber production, making maple sugar and pasture—three several uses on the same area. Or, if on a certain plot he can grow corn, beans, and pumpkins all together, he considers the practice wholly justified. The market gardeners, the most intensive of farmers, have reduced this technique to a complex system of intercropping.

Somewhat oddly, however, the most rigorous study of this principle of reconciliation seems to have been made in that department of agriculture which is least intensive of all, viz., in forestry. The capital illustration in this country is probably the national forests.

The popular conception of a national forest, or of any public forest reserve, is an area of land devoted to growing trees for lumber. Yet from the outset national forest administration has had to deal with other utilities of great importance, certain of them at times plainly overshadowing the specific objective of timber production. These require a brief recapitulation in order to emphasize what follows.

The first of these additional uses is watershed protection. This objective itself has several subdivisions: watersheds are protected (a) to conserve water for domestic use, (b) for irrigation, (c) for water power, (d) to equalize the flow of streams for navigation and manufacture, (e) to prevent soil erosion, (f) to protect fish and other wild life, and sometimes for still other purposes.

In the next place, grazing early assumed a position of great importance in national forest economy. The national forests still supply grazing to some 8,000,000 cattle and sheep annually. Finally, (to mention only major forms of use) it was tardily discovered that the national forests, because they necessarily comprise some of the best scenery, some of the wildest landscape, many of the streams and lakes best adapted to fishing, and the country where wild game keeps its last refuge—because of these essential facts, the forests are adapted to recreation on a large scale. Recreation has thus become a major land use coordinate with timber production, watershed protection, and grazing. These, in fact, constitute the four major branches of forestry as practiced on a national scale.

Now since each of these uses is valued in millions of dollars and is operated on areas of millions of acres, the problems of reconciliation assume a magnitude which makes their study imperative.

The first answer is almost always found in segregation of uses. Timber growing and grazing, for example, may usually be separated with little difficulty. An area of meadows, supplying good pasturage, does not produce timber trees. Other efforts at this sort of simple segregation will be mentioned presently.

It is important to notice at once, however, that this expedient is not so simple as it seems, and by no means final. As a matter of painful history we know that national forest administration has been faced from the first by a dilemma of counter-complaints, one group showing that grazing was detrimental to the forest, especially to reproduction, another group (the stockmen) protesting that the growing of trees was robbing them of their hereditary range.

Some of the outstanding, and certainly some of the most significant, examples of reconciliation by exclusion are to be found in recreation use. The Adirondack Forest Preserve of the State of New York has been set aside by the drastic expedient of constitutional amendment, upon terms which

exclude forever the practice of forestry, as commonly understood, from this princely domain. Even those improvement cuttings which might be conducive to final perpetuation of the forest itself are not permitted. Obviously, the idea of those who sponsored this legislation was that the Adirondack forest was more valuable as scenery and for recreation than for any of the more prosaic forms of forest use. In this they were literally right, though their aim considerably overshot its mark.

Quite parallel examples are to be found on an even larger scale in our national parks. Aside from all other considerations, a national park is an area (often occupied by good forest) dedicated to exclusive recreational use. This exclusive dedication is not accidental, but has often been avowed as a sufficient public policy, since in several instances large areas have been subtracted from national forests and converted into single-use national parks. It is rather odd that many responsible persons, including leading foresters, have not recognized the implications of these acts which mean obviously either a hopeless ignorance on the part of the public or else a very general belief that the recreation and inspiration to be drawn from an unspoiled landscape are wholly superior to any of the ordinary "economic" uses.

Another point at which reconciliation has been difficult is found where logging and recreation come into competition, or appear to be mutually exclusive. It was this view of their highly competitive character which determined the extreme action in the case of the Adirondack state forest and in certain areas added to the national parks. Yet long study of this problem on the national forests convinces me that a much higher degree of reconciliation is possible than has generally been assumed, either by lumbermen or recreationists.

For one thing a wild forest is a wild forest, not a lawn-mowed, tonsorially-kept park, and for millions of hardy citizens the wild forest is preferred by a wide margin. There is such a thing as overparking a landscape, especially a forest; and if this statement be doubted, let us refer in all charity to some of the areas recently manicured by ambitious CCC camps.

For another thing, logging operations have been enormously improved in recent years. The clean-cutting, slash-and-burn system, much too prevalent in the past, has been largely abandoned even on private forests and is wholly superseded by better methods on all public forests. The old prejudice is founded largely on the old practices, and one should be abandoned with the other.

Abundant examples are at hand to illustrate the workings of intelligent reconciliation. Timber growing and grazing have been brought into harmony over wide areas. Similarly, timber cutting and recreation have been successfully adjusted on a large scale. One specific and striking example may be cited from the Angeles National Forest where the famous Arroyo Seco is intensively used both for recreation and for domestic water supply. On the face of the case no two uses could seem less compatible, yet the extreme pressure of circumstances has forced a joint use. While final results are not perfectly ideal for either enterprise, the total utilization is far more valuable than could be gained from either recreation or water protection alone.

In fact, all argument, local bickerings excepted, might be set aside by one overwhelming observation, viz., that in the public forests of Europe (France, Germany, Czechoslovakia, and Sweden particularly) a very high degree of reconciliation has been achieved. Timber growing, game farming, water protection, and recreation are carried on side by side, often very intensively. This coordination of interests is taken for granted; it might fairly be said to represent the essence of foreign forest administration.

Constant progress toward this ideal is manifest in America. As forestry becomes better established and forest management better informed, wider and more efficient reconciliations are made. Indeed, it is the plain truth to say that reconciliation of uses is the precise index of success in forest management. Failure to make reconciliations, on the other hand, is confession of palpable failure. The arbitrary erection of exclusive uses, either for timber production, water protection, or recreation, indicates clearly a lack of insight into the problems involved or a failure of administrative machinery.

All this is far from saying that multiple uses must be maintained on every acre of land. Coordination is administrative rather than wholly geographic. In a typical national forest of a million acres, for example, some relatively small units will be used ex-

clusively for recreation, others for protection of domestic water. Grazing and timber cutting will be largely segregated. On the larger areas, recreation and wild life protection as incidental uses will go along with grazing or timber growing or both.

While the frank recognition of this principle and its general adoption would bring about some important changes in the national administration of parks and forests, the readiest theater for effective readjustment is to be found in state organization. Here we discover, in different states and in varied degrees, four forms of land use awaiting reconciliation. These are: (a) state parks, scenic and historic, (b) state forests, (c) fish and game departments, (d) highway departments. It must be observed that any state highway system is, in effect, a state park system, being extensively used everywhere for recreation. In a number of states, moreover, recent legislation has created a special congeries of roadside parks as an integral part of the highway system and under the management of the highway engineers.

Now all these activities overlap; they all occupy public land; they may be reconciled and coordinated toward the public welfare or they may become bitterly competitive. In general, it is coming to be recognized that state parks, state forests, and wild life demand a unified administration. They are typically brought together in a state department of conservation. This leaves the highway system to go its own peculiar way, the results at times being far from edifying.

No profound study is required to see that wise coordination of all these public services would demand the best services of a superadministrator. It is to be regarded as a misfortune, therefore, that the administrative chiefs of these state conservation departments must so often, under our glorious native theory, be political appointees. It is a resounding pity that the men of wide training, long experience, and proved ability in the conservation field (of whom there are a creditable number in the United States and Canada) cannot be established permanently in such offices.

However, the case is not so hopeless as it sounds. I have known a number of these political conservationists, and the majority of them have turned out to be much more than ward-heelers and party vote-getters. Some of them have proved to be good administrators and highly useful officials. The underlying fact is that a political appointee is likely to be an adept compromiser, and compromise is almost a synonym for reconciliation in the practical field. The politician probably has real tact; if he has also a good judicious mind and will listen without prejudice to the representatives of the various parties in interest (forests, parks, wild life), he can frequently effect a working adjustment where a man of high technical qualifications might have failed.

What the country now mainly needs is a clearer recognition of the principle of reconciliation and of its primacy in administrative practice. Add to this the courage to face all the practical implications and to put them into general effect, and our land administration might be extensively and advantageously reorganized on all levels—national, state, and municipal.

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County Zoning Authorized in Illinois

BY an enactment approved June 28, 1935[1] Illinois has technically joined the ranks of states which permit their counties to adopt zoning ordinances or resolutions. The word "technically" is used advisedly, for the statute scarcely fulfills the standards of effective county control over land utilization. As it stands, the law is little more than a glorified municipal zoning statute, glorified by being applicable to a wider area than that within the jurisdiction of a municipality. It applies more or less "urban" regulations to the unincorporated areas within county boundaries.

According to the powers conferred upon county boards by the county zoning enabling act, they may

> "regulate and restrict the location and use of . . . . structures and land for trade, industry, residence and other uses which may be specified by such board; . . . . divide the entire county . . . . into districts of such number, shape, area and of such different classes according to the use of land and buildings and the intensity of such use, as may be deemed best suited to carry out the purposes of this Act; to prohibit uses,

[1] Ill. Rev. Stats. (Smith-Hurd) 1935, c. 34, ¶225, §§1-7 (S.B. 112).

buildings or structures incompatible with the character of such districts respectively; and to prevent additions to or alterations . . . . of existing buildings or structures in such a way as to void the restrictions and limitations lawfully imposed hereunder . . . ." (§1).[2]

These powers apply, of course, only outside the limits of incorporated areas and their purpose is, as usual, the promotion of the public health, safety, general welfare, etc.

Examination of this list of powers reveals some striking omissions. Only three forms of land use—trade, industry, and residence—are definitely specified as coming within the jurisdiction of the statute. To be sure, the board may specify "other uses" to be regulated, but one wonders how comprehensive it can be in exercising its authority, especially in view of the fact that a subsequent paragraph of this same section definitely removes agricultural land and buildings devoted to agricultural purposes from the control contemplated by the statute.[3] This restriction upon the scope of zoning control is clear evidence that it is not to embrace a broad land utilization program based upon an inventory of land resources, land classification, and similar fundamentals. Even mention of land resources, conservation, and population distribution is missing from the statute. A question arises as to what would happen if the county board should attempt to extend its zoning control to forest or recreational uses of land, or to uses connected with soil or water conservation. Would they be ruled out along with agriculture?

The final statement in the grant of powers asserts that the zoning authority is "in addition" to the powers "conferred by statute to control or approve maps, plats or subdivisions." But no coordination is suggested between these powers and the new ones. Surely, no areas are more in need of constructive control than those which are likely to be cut up into city lots.

The remaining sections of the statute have to do with the machinery for exercising the zoning power. They cover such matters as establishment of the zoning commission; procedure for preparation and adoption of the zone plan; the provision of a board of appeals and the methods of its functioning; amendment of the ordinance; the proper steps to be taken in instituting legal proceedings for violation of the Act; and finally the penalties to ensure enforcement.[4]

Most of these are the usual routine provisions. One, however, deserves brief comment. After the zoning commission has prepared its final report and submitted its proposed ordinance or resolution to the county board, "the zoning commission shall cease to exist." Here is a body which, by virtue of its work in preparing the plan, has acquired specific knowledge, useful for administration of the plan. Yet it is discarded and the job may be turned over to another. According to the statute, administration and enforcement of the plan may pass to an officer designated in the ordinance or resolution. This officer may, in turn, issue rules and regulations concerning operation of the plan. Again, how much more effective it would be to have the zoning commission a continuing body, making its fund of detailed information the basis for sound administrative regulations.

While disappointing in many particulars, nevertheless, the Act represents a forward step. It recognizes the desirability for some control of land utilization outside of incorporated areas and it is to be hoped that, as these provisions are put into operation, the need for further powers may bring amendments conferring additional authority commensurate with the magnitude of the problems involved.

HELEN C. MONCHOW
Of the Journal Staff.

[2] Other powers enumerated include regulation of the intensity of use and the establishment of building or set-back lines.

[3] ". . . . nor shall they [the zoning powers] be exercised so as to impose regulations or require permits with respect to land used or to be used for agricultural purposes or with respect to the erection, maintenance, repair, alteration, remodeling, or extension of buildings or structures used or to be used for agricultural purposes upon such land; . . . ." (§1).

Also the zoning authority may not regulate the type or location of any "distributing equipment of a public utility," which is provided for in a separate statute.

[4] Violation of the zone plan is punishable by a fine of $200 or six months' imprisonment or both (§7).

Public Utilities Department

E. W. MOREHOUSE, *Editor*

Public Utility Financing in 1935

SECURITIES issued by public utility companies in 1935 aggregated $1,283,751,946, an increase of 710% over the 1934 total of $158,445,000.[1] The year's financing is interesting in several respects. A review reveals first that it was almost entirely for refunding purposes, less than 7% representing new capital. It was also restricted very largely to the major operating companies. The strong credit position of the issuing companies and the low level of interest rates which prevailed throughout the year combined to make the annual cost unusually low for the capital raised during 1935. Long-term mortgage bonds predominated. In fact, 72 of the 79 issues floated were in that category;[2] the 7 remaining issues consisted of 2 short-term mortgages and 5 capital stocks.

Of the 72 long-term debt issues, 52 were offered to the public, 17 were sold privately to institutional investors, and 3 were offered to bondholders in exchange for other issues. Two of the 52 public offerings were in fact serial debentures and have therefore been excluded from the analyses which follow. The 20 issues sold privately or exchanged have also been excluded for lack of adequate data as to terms of sale. However, the 50 remaining long-term issues account for 82% of the total of all types of utility financing in 1935 and thus furnish an excellent sample for study.

Detailed data contained in the prospectuses prescribed by the Securities and Exchange Commission make possible an analysis of the cost of capital, the underwriting commissions, and the amount of incidental expenses of financing.[3] When these facts are known, the amount by which cost to the issuer exceeds yield at the offering price may be computed. These and other details of public utility financing in 1935 are presented below.

Index Number of Volume

Before proceeding to the detailed analyses, we may bring up to date the index number[4] of the volume of public utility financing. The indexes for the fourth quarter and the year 1935 are:

Period*	Total Capital	New Capital	Refunding Capital
October	110.15	8.33	549.81
November	132.41	22.07	608.85
December	50.82	Nil	270.25
4th Quarter	97.79	10.13	476.30
Year	65.23	5.23	324.32

*The bases for these index numbers are as follows: monthly average, 1926, equals 100 for the monthly series; quarterly average, 1926, equals 100 for the quarterly series; and the year's total for 1926 equals 100 for the annual series.

The comparable annual figures for 1934 are 8.05 for the total, 3.09 for new capital, and 29.48 for refunding. It is readily apparent that financing for new capital purposes continued at a very low level but that refunding scored a sharp rise. Refunding was especially heavy in the last six months of the year. Anticipation of the December 1, 1935 effective date for the Public Utility Holding Company Act of 1935 may have been a factor here. This situation undoubtedly was also an important reason for the drop in volume for December.

Stock Issues. As already noted, capital stocks were used very little in 1935. The 5 stock issues, which account for only $34,830,546 (2.7%) of the total financing, consisted of three preferred series and two common or capital stocks. The largest stock issue was 152,817 shares of The Cleveland Electric Illuminating Company $4.50 Series no par, preferred, amounting to $15,701,946

[1] As reported by the *Commercial & Financial Chronicle*. Issues "not representing new financing," of which there were 6 by public utilitites in 1935, are not included in the compilations.

[2] Long-term debt issues are those maturing in more than 5 years. However, issues with serial maturities are classified entirely as long-term debt if the last maturities are longer than 5 years.

[3] For a few of the smaller issues it was not possible to secure the required data from the prospectuses or to make an independent estimate from other information given therein.

[4] For a description of the index and back figures through 1919, see "The Volume of Public Utility Financing, 1919-1935," 11 *Journal of Land & Public Utility Economics* 352-356 (November, 1935).

on the offering price of $102.75 per share.[5] Next in rank among the stock sales was The Edison Electric Illuminating Company of Boston's 82,289 shares of $100 par value capital stock which were offered to stockholders at $150 per share in the ratio of one new share for each 6½ shares held. This financing involved $12,343,350. The three remaining issues included $5,000,000 of Consolidated Gas Electric Light and Power Company of Baltimore 5% Series A preferred stock and two small issues by San Jose Water Works.

The year's equity financing was almost entirely for refunding purposes, only $1,785,250 representing new capital. Both the Cleveland and the Baltimore companies used the proceeds from their preferred stock sales to replace higher dividend rate preferred stocks, and the Boston Company will use the funds obtained from the sale of capital stock to meet a maturity of 5% notes due April 15, 1936. San Jose Water Works accounted for all the new capital financing through stock sales.

Short-Term Issues. Practically speaking, short-term financing was not undertaken by public utilities in 1935 whereas in 1934 $75,500,000 (almost ½) of the total was of that type. The very favorable terms on which long-term capital could be obtained account for this situation. The two short-term debt issues[6], each for $10,000,000, were by the same company and were merely extensions of the maturity date on existing debt.

Although not classified as short-term financing by the *Commercial & Financial Chronicle*, it should be noted that Southern California Edison Company, Ltd. issued $27,500,000 of 2½, 3½ and 3¾% debentures maturing serially each September 1, 1936 to 1945 inclusive, and Southwestern Gas and Electric Company issued $4,500,000 of 4% debentures, Series A, maturing serially on November 1, 1936 to 1945, inclusive. Inclusion of these two issues with the short-term total would not, however, increase it to a significant portion of the year's total of all financing.

Long-Term Debt Financing. The discussion thus far adequately covers the important features of the capital stock and short-term debt financing. We may therefore turn to a consideration of the long-term debt financing which totalled $1,228,921,400, or 96% of the year's total of all types. Although the long-term issues were 72 in number, only 50, totalling over a billion dollars, are considered in the remainder of this review for reasons noted above.

Size of the Issues. One of the principal characteristics of the long-term debt financing is the size of many of the individual issues as may be noted from the tabulation which follows:

Amount per Issue (In millions)	No. of Issues	Total Amount	Average Amount per Issue
Less than $1.0	2	$ 1,399,000	$ 700,000
1.0 to 4.9	6	15,000,000	2,500,000
5.0 to 9.9	10	65,665,000	6,567,000
10.0 to 14.9	3	32,089,900	10,697,000
15.0 to 19.9	8	132,766,000	16,596,000
20.0 to 24.9	3	62,000,000	20,667,000
25.0 to 49.9	15	550,963,500	36,731,000
$50.0 and over	3	196,000,000	65,333,000
Total	50	$1,055,883,400	$21,118,000

The largest individual offering made during the year was the $73,000,000 Southern California Edison Company, Ltd., 3¾% refunding mortgage bonds. The Duquesne Light Company $70,000,000 issue of first mortgage 3½% bonds was second, while Edison Electric Illuminating Company of Boston ranked third with $53,000,000 first mortgage 3½% bonds, Series A. Southern California Edison Company, Ltd. also did the largest amount of financing by any one company. It sold four issues which totalled $165,500,000, of which $138,000,000 was in refunding morgtage bonds and the balance in debentures. Pacific Gas & Electric Company had the second largest amount of financing; its three separate offerings of Series G first and refunding mortgage 4% bonds totalled $95,000,000. Other utilities sold more than one bond issue during the year, but in no case did the volume approach that of the two California companies.

Cost of Capital[7]

The weighted average cost was 4.01% per annum for the net capital raised by 47 of

[5] The bankers simultaneously offered 82,408 additional shares which did not represent new financing.

[6] A preliminary check with the issuing company indicates that the two short-term debt issues may represent a duplication. If further examination shows this to be true, revised index numbers for 1935 will be presented in the May issue of the *Journal*.

[7] "Cost of capital" as used in this analysis refers to

(Footnote 7 continued on page 93)

the long-term debt issues. The data on annual cost, which are summarized in Table I, show 3.43% to be the lowest and 6.41% to be the highest.[8] The low annual cost characteristic of public utility financing in 1935 may be seen from the fact that for 87% of the total net capital represented by the 47 issues the cost was less than 4.25%. Almost ½ the net capital fell within the range of 4.00 to 4.24% annual cost, while considerable concentration is found in each of the two immediately lower brackets in Table I.

TABLE I. COST OF CAPITAL FOR 47 PUBLIC UTILITY ISSUES FLOATED IN 1935

Per Cent Cost	No. of Issues	Amount of Net Capital*	Per Cent of Total Net Capital
Less than 3.50%	1	$ 53,714,000	5.19%
3.50 to 3.74	8	241,519,000	23.36
3.75 to 3.99	5	143,004,000	13.83
4.00 to 4.24	18	458,354,000	44.33
4.25 to 4.49	3	26,976,000	2.61
4.50 to 4.74	2	51,312,000	4.96
4.75 to 4.99	3	29,756,000	2.88
5.00 to 5.99	4	11,319,000	1.09
6.00% and over	3	18,098,000	1.75
Total.....	47	$1,034,052,000	100.00%

Weighted Average: 4.01%
Range: Low, 3.43%; High, 6.41%

*Represents net proceeds to company after underwriting discounts or commission and estimated incidental expenses.

In general, the largest issues were those on which the cost was lowest. Only 3 issues of more than $10 million principal amount show a cost in excess of 4.25%.

Several factors contributed to the low cost of public utility financing in 1935. The low level of interest rates which prevailed throughout the year on high grade bonds was the major element. The ranking position of the issuing companies is also an important consideration. For only one of the 50 long-term debt issues under consideration was the issuer a holding company and only 2 of the 50 issues were debentures, all others being secured by a lien on physical property. The term to maturity was very largely the conventional 25 or 30 years. Actual count shows that for 40 of the 50 issues, the term to maturity was from 24 to 30 years, inclusive. Two 35-year bonds were the only longer maturities. Six were scheduled to mature in 20 years, and the two remaining issues had maturities of 10 and 14½ years.

Underwriting Commissions. The weighted average of underwriting discounts or commissions, the so-called bankers' spread, was 2.273 points.[9] A wide range from 1.103 points up to 9 points is shown in Table II

TABLE II. UNDERWRITING DISCOUNTS OR COMMISSIONS ON 48 PUBLIC UTILITY ISSUES FLOATED IN 1935

Discount or Commission (In Points*)	Number of Issues	Principal Amount of Issues
1.103	1	$ 10,379,000
1.279	1	5,400,000
1.877	1	53,000,000
2.000	15	489,037,000
2.160	1	4,000,000
2.250	3	64,800,000
2.375	1	30,000,000
2.500	12	288,168,400
3.000	6	86,200,000
3.500	1	3,000,000
4.000	3	13,500,000
4.250	1	5,000,000
5.000	1	899,000
9.000	1	500,000
Total	48	$1,053,883,400

Weighted Average: 2.273 points

*See footnote 9.

for the 48 issues on which this item could be obtained. The concentration, however, is at the round amounts of 2 or 2½ points, especially for large issues. This margin may appear low when compared with underwriting commissions during the 1920's, but it must be kept in mind that the present sample

(Footnote 7 continued from page 92)

the per cent cost to the company, after underwriting commissions and incidental expenses, per annum on a bond-yield basis. Furthermore, the cost computations do not take into account the unamortized debt discount and expense remaining on issues called for redemption nor the call premium on such issues. In other words, cost is taken as though the financing were for new capital purposes and not for refunding.

[8] Three small issues aggregating $2,500,000 are not included in the cost computations because of inadequate data. Available information indicates, however, that in at least 2 of the 3 cases, the cost will approach 7.50%.

[9] The term "point" refers to per cent of principal amount, i.e., 1 point is equal to 1%.

is weighted heavily with the best grade of corporate securities.

The number of points for underwriting services tends to vary inversely with size of the issue. Except for one $45 million offering, the largest issue with a spread of more than 2½ points was $15,500,000; no other issue of more than $8,500,000 carried a spread greater than 2½ points.

Incidental Expenses. Reference to Table III reveals that 0.69 of one point was required on the average to cover incidental expenses for registration, printing and engraving, federal stamp taxes, and fees for trustees, attorneys, and auditors, and for other miscellaneous costs.[10] Although such expenses ranged upward from 0.39 of a point to 2.59 points, they amounted to less than 1 point for 86% of the total amount of securities. For only 5 issues, all comparatively small, were such costs in excess of 1½ points.

That incidental expenses do not vary in direct proportion to the principal amount of bonds sold is evidenced by the data. For the two largest issues, these expenses were less than ½ point, and only in a few scattered cases were they over 1 point for issues of $10 million and over.

TABLE III. INCIDENTAL EXPENSES ON 46 PUBLIC UTILITY ISSUES FLOATED IN 1935

Expenses (In Points*)	No. of Issues	Principal Amount of Issues	Per Cent of Principal Amount
Less than 0.50...	7	$ 282,342,500	26.88%
0.50 to 0.74...	15	437,266,000	41.63
0.75 to 0.99...	11	180,900,000	17.22
1.00 to 1.24...	3	59,000,000	5.62
1.25 to 1.49...	5	64,210,900	6.11
1.50 to 1.74...	1	5,000,000	0.48
1.75 to 1.99...	2	10,664,000	1.01
2.00 and over...	2	11,000,000	1.05
Total.....	46	$1,050,383,400	100.00%

Weighted Average: 0.69 point
Range: Low, 0.39; High, 2.59

*See footnote 9.

Effect of Commissions and Expenses on Cost

From the analyses that have now been made it is possible to obtain a measure of the effect of underwriting commissions and incidental expenses upon cost of capital to the issuing company, that is, to determine the amount by which the company's cost exceeds the yield to the investor at the offering price. The weighted average underwriting commission was found to be 2.273 points and the comparable figure for incidental expenses was 0.69, a total of 2.963 points difference between price to the public and net to the company. On a 4%, 30-year bond sold to the public at par, this margin would give a cost of 4.174% to the company. The 2.963 points spread thus raise cost 0.174% over the 4% yield to the public. If coupon rates[11] of 3½ to 4½%, terms of 25 to 35 years, and offering prices of a few points above to a few points below par[12] were used for similar computations, a small change would occur in the number of percentage points by which cost would exceed yield at the offering price. A range of 0.15 to 0.20% additional, however, would cover the results shown under such a range of variables and, furthermore, that range would embrace practically all the 50 long-term debt issues offered to the public in 1935.

While the results shown by the various analyses made in this review of public utility financing in 1935 may prove of interest in themselves, it must be reiterated that such results are necessarily affected by the high quality of the issues which comprised the bulk of the year's flotations. This fact must be borne in mind when any attempt is made to compare the present findings with similar studies of the more general financing in earlier years.

E. D. OSTRANDER
Assistant Supervisor, Section of Rates and Research, Illinois Commerce Commission

[10] The amounts reported in the prospectuses for incidental expenses are estimates, but in several instances where it was possible later to obtain actual figures very little difference was found.

[11] Eighteen issues had 4% coupon rates, 8 were 3½%, 7 were 3¾%, one was 4¼%, 7 were 4½%, and only 9 were higher than 4½%, the highest being 6% on one issue.

[12] Offering prices were from 98 to 104 inclusive for 45 of the 50 issues.

Comment on the Holding Company Symposium

REACTION to the two articles on the power holding company in the August issue of the *Journal* has led to the writing of that vicious thing, a destructive criticism. My purpose in this note is to comment on certain statements contained in the articles, and to attempt to explain why, in my opinion, they lack those attributes of precision which the treatment of great public questions so greatly needs. I hold no brief for or against the power holding company. This note is not an attack upon the subject of the articles; it is a critique of the subject matter.

Commissioner Splawn's article, "Is the Power Holding Company Necessary?"[1] was decidedly disappointing, to this writer at least. The disappointment was the keener since one would naturally look to a member of the Interstate Commerce Commission, who has been placed in charge of significant public investigations, for a more disciplined and instructive treatment of this controversial and timely issue. Perhaps the pressure of official duties accounts for the failure of the author to present a more precise argument.

Dr. Splawn begins by discussing the question of productive and non-productive economic activity, and poses the question as to whether power holding company activities are one or the other, or merely neutral. This type of approach lends little to the development of the real points at issue. Statements such as "the non-productive activities, such as swindling and the exercise of monopoly power, are generally disapproved by organized society," destroy the effectiveness of the approach. Is it fair to put monopoly, *per se*, and swindling, in the same category? Does Dr. Splawn regard as unproductive, and akin to swindling, all those local operating monopolies which he is at such pains later to defend from the clutches of the holding company?

His "two common uses of the holding company" (which must be productive to be justified) are: (1) to acquire control of operating power companies, and (2) through such control to divert revenues from the operating companies to those in charge (the management?) of holding companies. Should not the author indicate that "acquisition of control" is itself but a means to certain ends, and is not *necessarily* unjustified? Is it implied that holding companies come into being to enable their managements to divert operating revenues to themselves? Such statements should be accompanied by evidence or citations thereto.

Dr. Splawn then goes on to describe the way in which holding companies have obtained control of operating companies. (Why he emphasizes the acquisition of stocks *and bonds* for this purpose is not clear.) His explanation of acquisition of operating companies by the simple exchange of their controlling stock for senior securities of the holding company suggests that this is the common method of building up holding company groups. The revelations of the Federal Trade Commission investigation as to the cash prices which have been paid for operating company stock would seem to indicate that this method of holding company growth was worked to death years ago. But, he explains, when cash is offered, it is regained by the holding company through the public sale of senior securities based on deliberately inflated asset valuations. If this is common practice, might not the reader be at least referred to definite sources where proof of such practices is offered? One suspects that there may be much truth in this attack, but the unsupported implication that these things are always done seems rather sweeping without more evidence. Moreover, the statement that holding company pyramided structures are built up "without any financial risk" to those in control of the company at the apex of the pyramid implies that all holding company common stock is 100% watered, that good cash is never laid out to acquire such stock, and that there is no validity in the concept of trading on equity, whereby risk, as well as profit, is magnified in the lowliest securities of the group.

Certainly it is true that many motives, good and bad, have dominated the formation of pyramided utility structures. But to devote the whole of a section on "Uses of the Holding Company" to a description of ways by which control can be concentrated without any risk, obviously is to violate the promise of the heading of the section.

[1] 11 *Journal of Land & Public Utility Economics* 226-233 (August, 1935).

The author then goes on to discuss the "Alleged Advantages of Holding Companies." Here, at last, the reader feels he will find a criticism of the arguments of proponents of holding company control. A list of the defenses of the holding company is given, and each major argument is dealt with in subsequent paragraphs. This discussion will not be repeated here. Of the first two defenses, the author states that they "do not account for the power holding company as it exists." This is one way of dealing with arguments which are admitted to be not without merit. The author grants that one of these uses of the holding company, i.e., to bind together properties separated by state lines when such property "can better serve a locality when operated as a unit," is not unproductive; it is "neutral." Its vice is a "lack of clarity."

The holding company defense of diversification of risk is described as an "appealing lure to the investor." That holding company securities have been sold on this appeal is beyond question. Unfortunately, the author does not refer to the available material on holding company groupings to support his generalizations. "As a rule," "usually," and similar phrases are not convincing evidence of what has actually occurred. As a matter of fact, while much geographical diversification is only nominal, there are outstanding exceptions (viz: The North American Company) which, in fairness to the reader, the article should suggest.

Another point in this connection is that holding company structures are built up by purchase of the "thinnest equities," with the risk passed on to the senior securities. This is all too true of a number of groups, but an examination of the capital structures of holding company groups reveals many substantial common stock equities in these groups.[2] And, lest it be felt that these equities are unsupported by earnings, it is to be noted that these groups have shown a substantial coverage of all charges, including both subsidiary and holding company bond and preferred stock.[3] Dr. Splawn, in discussing the risk to senior security holders, suggests that "in case of a receivership of an operating company, the holding company can usually maneuver one of its employees into a position where it will appear to be necessary and fair to appoint him as a receiver." That this is the usual practice seems a too sweeping generalization without citation to supporting evidence.

Then we find the statement, "under the holding company set-up profits are taken without incurring risk, and risks are borne by the overconfiding public." Here again it should be emphasized that, where real equity exists, risk is entailed. That the above quotation is true in many of the most "watered" cases, and that it is partially true in a number of others, might well have been supported by reference to the abundant material available in the Federal Trade Commission's reports on power holding company groups.

The fourth defense of the holding company, that many services are performed for operating companies which are cheaper and better than these companies could otherwise obtain, is attacked solely by the statement that "these and similar assertions are made over and over again without furnishing evidence."

Perhaps enough has now been said to indicate the unsatisfactory character of Dr. Splawn's attack. A few other unsupported statements which he makes may be commented on very briefly. "Holding company control has to a large degree rendered state and local governments impotent to regulate their creatures—the operating electric companies." How? Why? "They [the holding companies] have been successful in keeping rates up far beyond the time for their reduction." A *specific* reference to Federal Power Commission findings would have been appropriate here. "The stocks of the best managed holding companies have been a

[2] For example, the per cent of total capital structure represented by holding company stock in four holding company groups at the end of 1934 was as follows: American Gas & Electric, 28.7%; Columbia Gas & Electric, 36.2%; Niagara Hudson Power, 30.6%; United Gas Improvement, 38.3%. (Computed from Moody's *Manual of Utilities*, 1935.)

[3] The times overall fixed charges and preferred dividends earned by the same four holding company groups in *depression years* are as follows:*

Company	*1934*	*1933*	*1932*	*1931*	*1930*
American Gas & Electric	1.47	1.48	1.61	1.92	2.05
Columbia Gas & Electric	1.16	1.33	1.62	1.96	2.39
Niagara Hudson Power	1.21	1.20	1.39	1.55	1.70
United Gas Improvement	2.27	2.30	2.50	2.68	2.54

* Moody's *Manual of Utilities*, 1935.

drug on the market." How about American Gas & Electric, Columbia Gas & Electric, Pacific Lighting, Public Service of New Jersey, Pacific Gas & Electric? The stocks of these companies have not been unaffected by the combination of a depressed market plus threats of dissolution, but have they been a "drug on the market"? Examination of price quotations would indicate otherwise. "The holding company has resulted in an illogical attempt to organize on a national scale a business which by its very character is local" (and, later, "the generation and supply of electrical energy are local"). Is there nothing to engineers' estimates of savings through elimination of local power plants? Does large-scale enterprise hold no promise in the power field? What is meant by "local"?

Many of the above criticisms apply also to the companion article, "The Future of the Holding Company," by Mr. Wendell L. Willkie.[4] Mr. Willkie, as president of The Commonwealth & Southern Corporation, is, of course, definitely on the defensive, and is concerned with demonstrating how the holding company device may be preserved for its advantages, and its abuses eliminated by proper regulation. His argument that mere ownership of operating companies located in more than one state is no sin is obviously correct as far as it goes and, incidentally, suggests the weak point in the arguments of opponents of the holding company, i.e., that many of the abuses of the holding company *necessarily* arise out of its lack of restricted geographical integration. (Dr. Splawn took pains to point out the inherently local nature of public utility operation, but did not demonstrate his point satisfactorily.)

Mr. Willkie suggests features of constructive legislation which might preserve the holding company's usefulness under adequate administration. These suggestions incorporate proposals to eliminate non-voting stock, "absentee" management, intercompany profits from services rendered, "upstream" loans (unless approved), acquisition of controlling stock without approval, and to require regulation of accounts, and control of interstate power rates by interstate power boards. Control of security issues and the requirements of adequate investment information can be taken care of by the Securities and Exchange Commission.

As for the defense of the holding company, Mr. Willkie's arguments are as general as Dr. Splawn's. Dr. Splawn says the holding companies have not contributed to more efficient and cheaper operation; Mr. Willkie says they have. Dr. Splawn speaks of the overconfident and risk-bearing public and Mr. Willkie of "that portion of the public which was willing to assume the hazards of the business and speculate on its future." To Dr. Splawn geographical distribution of the operating companies has been "fortuitous and opportunistic," but Mr. Willkie claims that "the basic economic reason for the holding company is the desire of men and women . . . . to develop as well as to diversify their investment of capital, both as to geographical location and variation of industrial or commercial activities."

Neither article is likely to make converts or to encourage a sympathetic attitude toward the holding company problem, although in this latter respect Mr. Willkie's article, by offering constructive suggestions, is somewhat more convincing than Dr. Splawn's. A stronger case could have been made by both writers had they made use of available factual materials.[5]

HERBERT E. DOUGALL
Associate Professor of Finance, Northwestern University

[4] 11 *Journal of Land & Public Utility Economics* 234-239 (August, 1935).

[5] There is a mass of material bearing on the power holding company question. Among the public documents dealing with this subject are: *Report*, Federal Power Commission, on Holding Company Control of Licensees of the Federal Power Commission, 1932. (Dr. Splawn supervised this study.) Federal Trade Commission, *Report* on Utility Corporations, 70th Cong., 1st Sess., Sen. Doc. 92 (72 volumes). *Report* on the Relation of Holding Companies to Operating Companies in Power and Gas Affecting Control, 73rd Cong., 2nd. Sess., House Report No. 827 (6 parts). (Dr. Splawn directed this study also.) *Hearings* before the Senate Committee on Interstate Commerce, 74th Cong., 1st Sess., on S. 1725 (Public Utility Holding Company Act of 1935.)

For shorter factual studies, see: Guthmann, Harry G., "Financial Ratios of Utility Holding Companies," *Chicago Journal of Commerce*, December 30, 1930—January 8, 1931; Waterman, Merwin H., *Financial Policies of Public Utility Holding Companies*, (Bureau of Business Research, University of Michigan, 1932).

A Note from W. M. W. Splawn

I HAVE read with interest the stimulating criticism which Professor Dougall has made of a statement of opinion which I submitted for a symposium published in the *Journal of Land & Public Utility Economics* for August, 1935. If one grants his assumptions, one must agree that his criticisms are just. Apparently, he assumes that my statement was a more formal one than I undertook to make. The statement was not a brief to support an argument. It was not a report based upon such data as those to which Professor Dougall makes reference in his criticism of the absence of footnotes. It was not a summary chapter of an exhaustive treatise on the holding company. It was merely an expression of my personal judgment as to whether or not the holding company is necessary in the power industry. This judgment matured through a period of years from contact with various investigations and through many informal discussions with different individuals who have been connected in one capacity or another with the formation, development, and management of holding companies.

WALTER M. W. SPLAWN

Mr. Willkie's Reply

DR. DOUGALL'S criticism that the arguments in my article were general is well taken. I assumed that in view of the briefness of the article that was what was desired. However, let us be specific and tell specifically what the diversified utility holding company has done.

The Commonwealth & Southern Corporation owns utility operating companies in 11 states. Its power systems are in middle sized cities, towns, and rural areas. We have in our entire system only two cities of over 250,000 population and only seven cities of over 100,000 population. The average population per community served is only 1,851. In the 11 states in which we operate our rates for domestic consumption are lower in each state than the rates of the so-called independent companies operating in such states. They are likewise lower in each state, taking into account taxes, than the rates of municipally operated systems in those states with the exception of the sections of Mississippi and Alabama where the heavily subsidized TVA rates are applicable. The average domestic rates in this country for the year 1935 are approximately 5.04c per kw. hr., while the average domestic rate in our system is 3.98c per kw. hr. In other words, our domestic electric rates are 20% below the national average, although we operate in a territory of low customer density.

Another type of holding company with diversified properties is the North American Company. Its operating units are located in large cities. A recent federal survey shows the rates charged for domestic electric energy in all cities of 50,000 or more population. In this group the North American Company serves nine cities and the so-called independent companies, or operating companies not affiliated with holding companies, serve 28. Yet the rates of the North American Company units are 18% lower than those of the group where the operating companies are unassociated with holding companies.

Let us be specific again and see what those who have studied this question for years have to say about the merit of the small independent plant of which Dr. Splawn speaks so feelingly in comparison with large-scale operation which has been brought about through diversified utility holding companies. President Roosevelt on November 5, 1926, writing from Warm Springs, Georgia, to Mr. Thomas W. Martin, had the following to say:

"We, in this and the neighboring communities, are suffering from the usual high cost and inefficient service of small local power plants . . . "

Also let me quote you what Mr. David Lilienthal, one of the TVA directors, said when he was public utility commissioner and before he became a competitor of ours operating his own holding company at public expense:

"Since the pioneer public utility acts of New York and Wisconsin were enacted two decades ago a new figure, the holding and management company, has come upon the field, demonstrated its prowess, and in a relatively few years changed the entire economic nature of the

public utility industry. Isolated plants have given way to great systems whose lines span several states and serve hundreds of communities, all operated under unified managerial and financial supervision. The spread of rural electrification, the amazing advances in telephony, the rise of superpower systems—these and many other technological developments so intimately related to the public welfare are directly attributable to the efforts of the holding company. Perhaps most important of all, to the holding company must go the credit for the unprecedented flow of capital into the public utility industry making possible extensions and improvements of service. Every phase of public utility operation—financing, accounting, engineering, management, public relations—have undergone great changes under the new regime."[1]

Let me quote further from the *Chattanooga News* of December 13, 1935, a statement made by Dr. Arthur E. Morgan, Chairman of the TVA, in which he proposes the organization of a nation-wide Public Ownership Institute as a means of improving the administration of publicly owned utilities:

"The institute should maintain a central service organization of attorneys, accountants and engineers—men trained in the administration in a sort of consulting staff that would be available for all members."

These services mentioned by Dr. Morgan are some of the precise services which the utility holding company provides for its operating units.

The space available for answering Dr. Dougall is limited. The examples cited here show specific accomplishments of public utility holding companies primarily in one respect only—that of rates. Given more space, the writer could present a long catalog of utility holding company achievements in other lines as well.

WENDELL L. WILLKIE.
President, The Commonwealth & Southern Corporation

[1] "The Regulation of Public Utility Holding Companies," 29 *Columbia Law Review* 404 (1929).

Valuation and Rate-Making for Telephone Companies

CHANGES in price levels during recent years, prices charged by the Western Electric Company for materials and equipment sold to operating telephone companies, and grossly inconsistent company depreciation policies have figured prominently in recent telephone rate cases.

In *Southwestern Bell Telephone Company* v. *Oklahoma Corporation Commission*[1] the Commission's engineer found a reproduction cost that approached closely historical costs reflected on the company's books. Pronounced differences existed between figures of the company and those of the Commission respecting reproduction cost of the company's property, 90% of which had been constructed between 1917 and 1931. Despite the high prices prevailing during that period the company claimed reproduction cost in July, 1934 greatly in excess of historical cost which was not in dispute. The Commission computed reproduction cost for a large portion of the property on the basis of prices quoted by the Western Electric Company as of December 31, 1933, because on January 1, 1934 all companies manufacturing telephone equipment "automatically and without apparent justification" increased the prices on much of the equipment by 20 to 30%. Presumably this action was designed to protect the manufacturing companies against declining profits because of decreasing sales volume, as well as to protect the rate-bases of operating telephone companies.[2] The company made no effort to justify these price increases and, although willing to testify, the Western Electric was not called as a witness.

Although the company claimed a property condition of 94.34% of new construction (by the observation method) and an average age of property in excess of seven years, it claimed a 4.1% rate for annual depreciation. The Commission, using historical cost to July 31, 1934 as a rate-base, found property 81% of new condition, an average elapsed life of more than seven years, and a depreciation rate of 4%.

The North Carolina Utilities Commission apparently did not feel it necessary to defend its statement that the Bureau of Labor Statistics Index of Wholesale Prices was the best measure of changes in value of property resulting from changes in price level.[3] Investment of $12,000,000 (the company claimed $18,000,000) made from 1916 to 1930 was scaled down by 20% to allow for changes in prices and after applying a 20% figure as claimed by the company for depreciation, the Commission obtained a figure

[1] 9 P.U.R. (N.S.) 113 (1935).
[2] *Ibid.*
[3] *Re Southern Bell Telephone and Telegraph Company*, 7 P.U.R. (N.S.) 121 (1935).

which approximated that of reproduction cost less depreciation. However, in securing the final figure representing value for rate-making purposes, the Commission did not proceed according to any formula and did not state what specific weight, if any, was given to price indexes. By stating that it had determined value for rate-making "after considering all relevant factors pursuant to directions in *Smyth* v. *Ames*," the Commission was probably seeking protection against possible court reversal of its findings. In its expense account the company carried an annual allowance of 4.44%, which, with a 6-year average age of its properties, would give a 26.64% depreciated condition when actually it claimed only 20%. In accepting 20% the Commission prescribed 3.33% annual depreciation for the future.

The Southern Bell Telephone and Telegraph Company tried without success to impeach the use of standard "general purpose" price indexes used by the Louisiana Public Service Commission to show costs of reproduction below those claimed by the Company.[4] Greatest additions to property account were made in 1926 and 1927 when average prices were much higher than on the date of valuation, October 31, 1934. Specific price indexes employed by the Commission were those of the Bureau of Labor Statistics (containing 784 articles, 109 raw materials, 93 semi-manufactured articles, and 582 finished products), Bradstreet, and the Federal Reserve Bank of New York. The Commission contended that, since everything except 109 raw materials in the Bureau of Labor Statistics index reflected labor cost, the most important item in construction cost; since the Bradstreet index showed substantial weighting for construction materials and since finished products represented sizable portions of labor; and since wages and materials were reflected in the exhibit showing the 12 components of the price level index of the Federal Reserve Bank of New York, the use of such indexes was a proper procedure in establishing the fact of reduced construction costs. In addition to these indexes the Commission's witness presented exhibits showing price trends of 11 basic articles used directly or indirectly in telephone plant construction. Action of the Western Electric Company in raising prices on various types of materials and equipment from 1930 to 1934 was condemned as unjustifiable by the Commission.

Great disparity existed between the amount of depreciation found by the company's engineer and the amount accumulated in the depreciation reserve. The latter was determined by apportioning to the Southern Bell's property located in Louisiana an amount equal to the ratio of value of its Louisiana property to the total property of the company. This method was disapproved by the Commission in favor of a reserve based on specific accumulations on the property actually used in Louisiana over a period of years. Actual depreciation reserve on the "apportionment" method was 23% of the book value of depreciable property, and on the "accumulative" method 27%; for rate-making purposes the company's engineer found 11.7% based on observation of "sampled" property. The annual rate of total depreciation claimed was 4.64% with an average age of 7.31 years for depreciable property. Because of recent reduction in number of phones in use the Commission declared obsolescence and inadequacy of little importance as depreciation factors, leaving physical life as the major depreciation factor. Hence the Commission declared a 4.64% depreciation rate excessive; substituted 3.14% therefor, and permitted a 23.5% depreciation reserve. Excess capacity of 18.1% was reduced 12.5 percentage points, leaving 5.6% as a reasonable margin of growth. No precise calculation was given to explain final value upon which a 6% rate of return was declared to be reasonable.[5]

In the case of the *Southwestern Bell Telephone Company* v. *City of San Antonio*[6] involving reasonableness of rates imposed by the San Antonio Board of Commissioners, the United States Circuit Court of Appeals set aside the decree of the Federal District Court[7] and remanded the case because the

[4] *Louisiana Public Service Commission v. Southern Bell Telephone and Telegraph Company*, 8 P.U.R. (N.S.) 1 (1935).

[5] A Louisiana lower court refused an interlocutory injunction restraining enforcement of the Commission's order for a rate reduction based on its findings in this case. (*Southern Bell Tel. & Tel. Co. v. La. Public Utilities Commission*, 8 P.U.R. (N.S.) 26 (1935).

[6] 7 P.U.R. (N.S.) 433 (1935).

[7] 2 F. Supp. 611; P.U.R. 1933 D 405.

lower court had found "nothing specific but a rate of return" and had discarded the report of a special master without either showing reason or substituting separate findings of its facts. In disposing of the case, the court made the following observations: that entries on the company's books, although not known to be actual costs, ought not to be regarded as entirely without evidentiary value; that the fact that the Western Electric Company sells at slightly higher prices to independent telephone companies which could buy elsewhere is powerful evidence that the prices charged to the Bell companies are not excessive; that a court in disapproving a method of apportionment of exchange and toll property should ascertain a better method.

Pricing practices of the Western Electric Company as revealed in the cases cited above represent a striking example of price inflexibility which prevents adjustments to changing economic and business conditions. Lags in adjustment of public utility prices to general price situations have been commonly recognized as important elements of friction in our "automatically" controlled price system. Such intercorporate relationships as those exemplified by the American Telephone and Telegraph Company, the Western Electric Company, and the various Bell operating telephone companies enhance the difficulties of regulatory bodies. If the Federal Communications Commission succeeds in making a thorough investigation of these relationships, the results doubtless will not be uninteresting to students of utility regulation and buyers of telephone services.

Earnest and rather meritorious efforts are made by commissions to determine value for rate-making purposes in terms of changing values of money by the use of indexes. These indexes, although not perfect, would seem to satisfy reasonable requirements of valuation as sufficiently as the method of complete repricing of units of property—and eliminate delay and expense of appraisal. Yet despite these efforts the commissions meet with discouraging rebuffs from the United States Supreme Court which offers little that is more definite than its statement more than 35 years ago in *Smyth* v. *Ames*. In the face of the decision in *West et al* v. *Chesapeake and Potomac Telephone Company of Baltimore City*[8], one might conclude that the decisions by the commissions in the cases outlined above, if brought before that Court, would be held invalid, not necessarily because values were too low but rather either because indexes used to show changes in cost of reproduction were not suitable for that purpose or because the commissions failed to show precisely how the final figure representing value was derived.

Finally, one is impressed by the lack of temerity on the part of utility companies in presenting before the commissions claims for depreciation reserves, rates of annual depreciation, and depreciated values of property that exhibit such wide discrepancies in amounts. While admitting that depreciation does not accrue in equal annual amounts and that lack of advance provision for suddenly operating causes, such as obsolescence and inadequacy, may in the interest of continued efficient service to customers require some latitude on the part of commissions in the administration of depreciation policies, it is equally clear that rate-payers should not be forced to contribute amounts in excess of what is necessary to maintain utility property in an efficient operating condition. Although the cases under review here, and others in the records[9], reflect increased efforts by commissions to exercise greater control over depreciation practices, there seems to be no evidence of unfairness in the regulations that have been imposed. Provided commissions do not encounter too many court reversals, one might reasonably expect a tendency toward more conservative financial policies on the part of utility companies in the future.

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[8] 8 P.U.R. (N.S.) 433 (1935). For comments on this decision see Martin G. Glaeser, "The Supreme Court Sheds More Light upon the Doctrine of Fair Value", 11 *Journal of Land & Public Utility Economics* 316-318 (August, 1935) and E. W. Morehouse, "Price Trends in the Baltimore Telephone Case", *Ibid.*, pp. 318-319.

[9] See J. A. Krug, "Utility Depreciation Practices under Commission Scrutiny", 11 *Journal of Land & Public Utility Economics* 319-322 (August, 1935).

Wisconsin Severance Damage Case

SEVERANCE damages have been denied in a municipal acquisition case in Wisconsin, a ruling upheld by the Wisconsin Supreme Court in a recent opinion.[1] This conclusion, on its face, has far-reaching implications, both for privately owned utilities and the municipal ownership movement. However, certain state statutes should be understood before making general application of the major principle involved—namely, that a municipality in acquiring a distribution plant does not have to pay damages for severance from a generating and transmission system.

The case is known locally as the Brooklyn acquisition case. Brooklyn is an incorporated village with a population of 406 in 1930. In 1931 the electors voted, 109 to 23, to purchase the plant and equipment owned by the Wisconsin Power and Light Company and used and useful in rendering electric service to the public in the village. A proceeding was then started before the Public Service Commission to determine the used and useful property to be acquired and the amount of compensation. After a number of hearings at which testimony on severance damages was taken and various valuation estimates were contested, the Commission made its findings and decision, refusing to award severance damages to the company.[2] Upon appeal by the company, the Circuit Court and now the State Supreme Court have upheld the Commission.

Electric service was first rendered in in Brooklyn in 1915 by a direct-current system serving two or three buildings from a generator located in the promoter's garage. In 1917, the Brooklyn Electric Light and Power Company was formed to render service under a franchise granted by the village. The same local promoter owned this company. No generating plant was built by this company; instead it purchased energy for distribution from a transmission line. Both the transmission line company and the Brooklyn company were subsequently acquired by the Wisconsin Power and Light Company. The last-named company is a consolidation of a great many smaller utilities and now operates an interconnected system in southern and central Wisconsin. The company's system has approximately 89,000 customers, of whom 179 were in Brooklyn.

The Commission found a value of $10,000, including going value, for the useful property to be taken.

The company claimed severance damages first in the amount of $116,188. Later this claim was withdrawn and one of $56,106 substituted, itemized as follows:

Depreciated Investment, Main Power System	$28,608
Non-Variable Expense, Main Power System	5,196
Depreciated Investment, Local Transmission Lines	8,906
Non-Variable Expense, Local Transmission Lines	1,335
Depreciated Investment, Local Substation	2,145
Non-Variable Expense, Local Substation	761
Move Transmission Line Outside Village	6,966
Move Farm Line Outside Village	681
Move Substation Outside Village	804
Build Line to Rural Customers	704
	$56,106

The basis for the company's claim was thus stated:

"The Wisconsin Power and Light Company supplies electric service at either wholesale or retail to 339 communities in the central part of the State of Wisconsin. The energy for this service is generated in 9 steam plants and 36 hydro-electric plants. In addition to which interconnection is made with the transmission lines of several other companies to assure reliability of service. The energy generated is sent out over 1170 miles of main interconnecting transmission lines, from which 1627 miles of local transmission lines are used to bring service from the main interconnecting transmission line system to the small communities. If any of the communities supplied from this system are detached from the others, there results damages to the other parts of the system because it is designed to supply all of the communities as a unit.

"The Wisconsin Power and Light Company's property as it now exists is an individual operating unit constructed to supply the entire territory as a unit . . . The company's large and efficient generating plants and the interconnecting transmission lines have made it possible for service to be rendered to the 339 communities now supplied electricity. With small independent power plants many of these communities would not have electric service. By having one individual company whose officers direct the operation in all communities, the cost of service to the customer is lessened by:

A. Lower power costs,
B. Officers' salaries for individual companies,
C. Office space in each community,

[1] *Wisconsin Power and Light Company v. Public Service Commission*, Supreme Court, January Term, 1935, No. 186, decided June 24, 1935.

[2] *Re Purchase of Electric Distribution System by Village of Brooklyn*, 2-U-85, decided March 21, 1934.

D. Reduced operating personnel for each community.

"If we suppose that the communities now served by the Wisconsin Power and Light Company would drop off one by one without paying severance damages until only one or two communities remain to be served from the extensive generating and transmission system which has cost the company over thirty millions of dollars, the cost to serve the remaining communities would be prohibitive. The severance damages computed herein may seem abnormally high but when one considers that the condemnation of a utility in an individual community is a step towards dismantling a large company which has been built up in order that rates may be reduced and service may be bettered, it is apparent that material damage will occur. (Exhibit 14.)"

Both before the Commission and before the courts, the Company asserted that all the property in its system constituted an operating unit regardless of how many franchises it held. If part was taken, damage was done to the remainder of the system and its customers, and this damage should be paid for. Especially stressed was the fate of remaining customers, particularly farmers, if parts of the system were whittled away without severance damages. The company also pictured the plight of investors who would own generating plants and transmission lines with little or no use for them if all communities acquired their distribution plants without paying for damages to the remainder of this system. The approximate claimed values of the different parts of the company's electric system were:

Steam and hydro plants	$ 19,000,000
Transmission system	13,275,000
Local distribution systems	8,340,000
Rural lines	3,400,000
	$ 44,015,000

Legally, the company claimed that the acquisition was a condemnation proceeding so that the severance damage principles of the law of condemnation would apply. In supporting this theory the company claimed that the statute of 1907 authorizing the conversion of term franchises into indeterminate permits only wiped out the right to a jury verdict of the necessity of taking the property, if the utility voluntarily surrendered its term franchise for an indeterminate one.

In interpreting the position of the Commission it is important to recall the wording of the relevant statute, which is as follows:

"Any public utility accepting or operating under any license, permit or franchise granted after July 11, 1907, shall by acceptance of such indeterminate permit be deemed to have consented to a future purchase of its property actually used and useful for the convenience of the public by the municipality in which the major part of it is situate for the compensation and under the terms and conditions determined by the commission, and shall thereby be deemed to have waived the right of requiring the necessity of such taking to be established by the verdict of a jury, and to have waived all other remedies and rights relative in chapters 196 and 197."

The Commission took the position that the indeterminate permit under the law was in the nature of a contract with the city and that the municipality was exercising its right under the contract to terminate it by purchase of the useful property. Under this interpretation the proceeding was more akin to a purchase case than a condemnation case, so far as relates to severance damages. The Commission recognized that when the law was enacted utility properties had quite a different character from the present modern interconnected systems. Relying upon the so-called Menasha case (*State ex rel. Wis. Traction Light, Heat & Power Co.*, 162 Wis. 234 (1916)) the Commission held that a modern utility system consisted of (1) "a series of utilities each one of which constitutes a separate entity located in the municipality in which it serves, and (2) a power system designed to serve these separate utilities . . . ."

Consequently the Commission took the view that the municipality in exercising its option to purchase merely had to acquire the property of the local entity which in this case was in effect the distribution plant. Attention was called to the fact that if severance damages were allowed they would be equivalent, on the company's claim, to a purchase price for generation and transmission property without the municipality getting anything for its money. In other words, the village could not acquire an undivided interest in a portion of a generator or a transmission system. The Commission further denied that the company's loss of a legal right to serve the Brooklyn utility, with a consequent loss of that business, was a proper foundation for a claim for damages to the power system. To hold that the company was entitled to damages for loss of business from cutting off a legal right to serve in a community would, in the Commission's opinion, defeat the

purpose and intent of the Legislature of making it possible for municipalities to enter into the electric business. Furthermore, the Commission pointed out the incongruity of requiring a village to pay severance damages amounting to from 5½ to over 10 times the value of the property actually taken. If municipalities have to pay such amounts in order to exercise their statutory option to purchase, the municipal ownership movement would run into an insurmountable obstacle.

The opinion of the Supreme Court, after reviewing the relevant cases, held that the proceeding was in some aspects a purchase and in other aspects a condemnation. The Court brushed aside as of no consequence what descriptive name was attached to the proceeding. It upheld the Commission's interpretation that the unit of property dealt with in such an acquisition was the local entity and not the whole property of which the local distribution system was a part. In the words of the Court,

"Under the existing statutes the Commission is required to treat the local entity as the unit and to award compensation upon the basis of the value as a going concern of the property taken that is 'actually used and useful for the convenience of the public.' This is the language of the statute and expressly fixes the measure of the compensation. The measure of compensation fixed by the statute cannot be increased by the owner by taking the current consumed by the local utility from its high tension line on the theory that the property taken over is only a part of an entire unit comprised of local distribution systems, transmission lines and generating plants."

Nevertheless, the Court was mindful of the fact that many changes have been made in methods of rendering electric service since the time the statute was passed. An inferred invitation to change the statute is found in the statement that the company's proposition raised "a question of public policy that should be declared by the legislature."

Wisconsin is one of the few states having an indeterminate permit law in operation. It is not clear, therefore, to what extent the ruling in this case is applicable in other jurisdictions. However, the economic significance of the company's claims and of its denial in this case is worthy of note. Whether or not this ruling, if sustained in the event of appeal,[3] will pull down the barriers to a more vigorous municipal ownership movement or will afford the Commission an additional regulatory tool remains to be seen.

E. W. Morehouse.
Director, Division of Rates and Research, Public Service Commission of Wisconsin.

[3] The Company has apparently elected not to appeal this decision.

Book Review Department

Urban Land

Adams, Thomas. Outline of Town and City Planning. *New York: Russell Sage Foundation, 1935. pp. 368. $3.00.*

"Great advances have been achieved in the technique of making plans and reports . . . ", but we have not advanced sufficiently in the technique of administering such plans nor in making plans, as shown by reports, effective. In view of the changing aspect of city, regional, state, and national planning during the past three years, one anticipates, in taking up a new book on the subject of planning, that it will deal with the changing functions of planning, with the technique of gathering basic data as a prerequisite to proper planning, and with the procedure of carrying plans to accomplishments.

Judging by the fact that the introduction was written by Franklin D. Roosevelt in December, 1932, it appears that this book was prepared at the end of the period of "practical planning" as distinguished from the earlier period of "planning for beauty." Although the book has, according to the author, undergone considerable revision during the 18 months prior to publication, it must be assumed that the main body of the work was completed prior to the present "era" when we are emphasizing the "social and economic aspects of planning." As a matter of fact, the author states that the volume is based, to a large extent, on a course of lectures on city and town planning delivered to students of the Department of Architecture of the Massachusetts Institute of Technology over a period of 11 years, and that the lectures "reviewed general and historical backgrounds, and existing conditions and problems."

The greater part of the *Outline* deals with the historical aspects of planning and the book would have a more descriptive name if it were called "A History of Town and City Planning." It deals with "Ancient City Planning," "Planning during the Middle Ages," "Planning during and after the Renaissance," "Early and Recent Developments in the United States," etc.

As a historical outline of city planning, to be used by students of planning, it will admirably serve that purpose. In view, however, of the great strides which have been made in planning technique (it being the reviewer's opinion that we are today approaching town planning correctly for the first time), it is unfortunate that a greater portion of the book was not devoted to a description of the changes in technique, many of them subtle but highly important, and particularly the technique of administering plans. For some years we have been teaching the principles of city planning design; in England, the schools of architecture have for many years made general planning design a fundamental part of their instruction; but we have too little information today on the methods of gathering basic and essential information without which no planning can be accurate, and we are still overlooking to a considerable extent the fact that plans properly prepared must be made effective by governmental bodies, by politicians, if you please. A book dealing with the social and economic aspects of planning, a book dealing with planning administration would truly be valuable at this time.

W. H. Blucher.
Executive Director, American Society of Planning Officials

Newman, William H. The Building Industry and Business Cycles. *Chicago: University of Chicago Press, 1935. pp. ix, 73. $1.*

Fluctuations in the building industry in the United States from 1875 through 1933 are measured by the combination of various series of building permit data. Mr. Newman recognizes the weakness of building permit data, but he is confident that they are valid for depicting the timing and extent of fluctuations in the private building industry. Three major cycles and 11 minor building cycles are noted. Building activity is shown to be, to a large extent, independent of general business activity but of critical importance at turning points in the business cycle.

In his attempt to arrive at the reasons for fluctuations in building, Mr. Newman comes to the following conclusions: (1) Changes in land values and in building costs tend to follow changes in building activity and

cannot be regarded as causes. They are important factors, however, in determining the amplitude of building cycles. (2) The ease of financing building as reflected by long-term bond yields is an important factor determining building cycles. The cost of money for building does not vary greatly but the amount available does. (3) The aggregate amount of population shifting governs the major building cycles to a large extent and population increases are responsible for initiating building booms. (4) Rising rents and falling vacancies appear to initiate building booms, but once under way the booms are not immediately responsive to changes in these factors.

In the final chapter the author discusses the possibilities of stabilization in the building industry under the headings: stimulants to activity, government building, subsidies, financial control, budgeting, and competition. The stabilizing effects of the New Deal for building are also discussed. While admitting some value in a well planned public works program and the control of money, he apparently has greatest faith in the enforcement of effective competition, such competition to be enlightened by comprehensive information on the need for houses. Fluctuations would still occur but their amplitude would be reduced. There is no discussion of the difficulties, political and other, in the way of enforcing effective competition. The confidence placed in better statistical information as a substantial factor in reducing fluctuations seems somewhat optimistic. The discussion of the effects of New Deal legislation on the building industry is sketchy. Moreover, no recognition is made of the growing social demand for more adequate housing. Nor is it pointed out how enforced competition will eliminate the inefficiencies, shoddy construction, and malpractices characteristic of some phases of the building industry.

The body of this monograph presents valuable contributions to our knowledge of building and business cycles. The final chapter, on the other hand, with its inadequate discussion of methods of stabilization and incomplete appraisal of the New Deal mars the earlier achievements of the study.

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Bassett, Edward M., Williams, Frank B., Bettman, Alfred, and Whitten, Robert. MODEL LAWS FOR PLANNING CITIES, COUNTIES AND STATES. *Cambridge: Harvard University Press, 1935. pp. viii, 137.*

Particularly timely is this seventh volume in the series of Harvard City Planning Studies. Now, when planning is being urged and actively promoted for so many governmental units—particularly counties, states, and regions—a stock-taking of the present legal status of planning is especially useful. This book sets forth the opinions of four experts as to what can be done within the limits of the law and also suggests what further steps seem possible without too grave danger of reversal at the hands of the courts.

While in substantial agreement as to the ends to be sought by planning and zoning control, the contributors differ somewhat in the methods proposed for achieving them. This difference of opinion, however, enhances the value of the volume, because different approaches may be desirable in different jurisdictions. In general, Messrs. Bassett and Williams are rather more conservative in their proposals, preferring to recommend a course well within the limits defined by court interpretation. Mr. Bettman and Mr. Whitten, however, while also keeping an eye on legal precedent, are somewhat bolder in their proposals.

There is something to be said, of course, for both points of view. It is well not to endanger unduly what has been accomplished toward establishing a sound legal basis for city planning and zoning. On the other hand, we are in the midst of a period of enthusiasm for the planning idea. Perhaps this is the time to take advantage of the current interest and to push forward some of the proposals for making planning still more effective.

A book such as this cannot be reviewed in short space. Neither mention of the great variety of points covered in the book nor exhaustive critique of one or two items which may be of special interest to the reviewer would be satisfactory. Sufficient therefore is the recommendation that the book be carefully studied by those who are engaged in establishing planning machinery and procedures. Its critical analyses and carefully prepared forms will be valuable to technicians and students alike.

HELEN C. MONCHOW
Of the Journal Staff.

Land Resources

Jesness, Oscar B., Nowell, Reynolds B., and Associates. A PROGRAM FOR LAND USE IN NORTHERN MINNESOTA: A TYPE STUDY OF LAND UTILIZATION. *Minneapolis: University of Minnesota Press, 1935. pp. xvi, 338. $2.50.*

This brilliant report is more than a "type study"; it is a model, for several major reasons, for similar studies which must be made for many parts of the United States, if we are to deal intelligently with our natural resources.

It is, first of all, one of the most beautiful examples of collaborative research I have ever seen. Directed cooperatively by agencies of the Federal and State governments, it has enlisted the services of the forester, soil chemist, political scientist, economist, educator, agricultural economist, engineer, sociologist, and administrator. Each of these technicians has deployed his field forces—groups of three or four who have spent a summer collecting data on this point or that; each study has fitted into the mosaic, so as to paint a total picture when all were put together. My guess is that no large special grants of funds were necessary; graduate students were used who would have done some kind of field work anyhow; and research funds were applied which would otherwise have helped one or another of the collaborators to carry on his bit of work. What has been applied is intelligent direction toward a unified goal. As an example in research methodology, this study should have wide influence.

This study is a model, too, in the breadth of its attack upon the problem of land use. The description of the region includes not only natural characteristics, but social, economic, and governmental characteristics. Programs are advanced for improved use of forest and agricultural land which inevitably require shifts of population; the authors have boldly faced the problems involved in moving farm families. They have considered moving costs, the costs of acquiring new land, the possibilities of salvaging buildings; and they have made budgetary estimates of prospective farm incomes, as against existing incomes, to see whether the expenses of resettlement would be justified. The studies are not generalized, or typical, or average; they are related to facts in the region. Thus, the authors have considered specifically how many more children could be accommodated in existing schools in the areas of better soils, without the costs of providing additional school plant. And they consider as an integral part of the problem the necessary reorganization of local government and taxation.

Finally, the report is to be commended because it is not merely a survey, nor does it take refuge in suggestions which could only be adopted after a fundamental bouleversement of our economic system. It concludes with definite and feasible legislative and administrative proposals which would go a long way toward solving the problems encountered. It is in the best tradition of Minnesota and its University.

CHARLES S. ASCHER.
Secretary, Public Administration Clearing House.

Mackintosh, W. A. ECONOMIC PROBLEMS OF THE PRAIRIE PROVINCES. *Toronto: Macmillan Co., 1935. pp. x, 308. $4.*

Volume IV of the series on Canadian Frontiers of Settlement discusses the economic problems of a region—the Canadian Prairie—which has been treated geographically in an earlier volume, and upon the physical base laid in that preceding volume the economic structure is built in the present book. The study admirably portrays, both historically within the Prairie Provinces and objectively for pioneer regions as a whole, the economic problems which a settler in a new region faces. "Economically, he deals with the cost of land, the cost of living, the value of his product, the cost of transportation, gross income, expenses, net income, the demand of the world for his products, and the cost of the products which he must purchase."

The volume discusses economic trends and fluctuations within the Prairie Provinces from the time of settlement to the present. The dominant importance of wheat, both in terms of wheat production per capita in Canada and in light of the fact that 60% of the field crop acreage of the three Prairie Provinces is sown to wheat, is stressed as of fundamental importance to the understanding of the regional problem. "The producer of wheat has been profoundly affected not only by changes in the price . . . in the world market, but by changes in the cost of transporting the wheat to that market."

A thoroughgoing analysis is made of the various factors entering into the shipment of wheat from the plains to Liverpool.

Problems of the acquisition of an adequate transportation system for Manitoba, Saskatchewan, and Alberta are discussed, and the historical facts of railway building are set forth. Following this, there is discussion of marketing problems, wheat pools, and regulation of the grain trade.

Internal economic conditions within the region itself receive considerable attention, six chapters dealing with provincial finances, with the distribution of financial burdens and services, with rural local government, local taxation, local expenditures, and financial problems of the depression. The study of provincial finances and of the distribution of financial burdens and expenditures uses Alberta as a sample province of the region for detailed discussion. Saskatchewan is used as a sample in the local studies, which are concluded with a study of the weight of rural taxation in the Province.

The reader is left with a new knowledge of the economic problems of the Canadian Prairie in particular and of recently settled areas in general. The extremely detailed survey of local taxes and expenditures in Saskatchewan is illuminating to readers south of the border, especially to those who may not have known about the "rural municipality," telephone taxes, the paid government physician, and other variances from general custom and practice prevailing in the United States.

The volume is replete with tables and graphs, and is another of the admirable series sponsored by the Canadian Pioneer Problems Committee under the general editorial direction of Professor Mackintosh and W. L. G. Joerg.

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NATIONAL PLANNING AND RURAL LIFE. *Chicago: University of Chicago Press, 1935. pp. 156. $1.50.*

The contents of this volume constitute the proceedings of the seventeenth conference of the American Country Life Association. The central theme of the conference is given in the title of the book and the papers bring out three aspects of the subject: "(1) trends making adjustments and planning necessary; (2) current experiments in national planning; (3) in the light of the experiments and trends considered, what should be done to improve the programs and agencies at work in rural America?"

The problems before the convention may be summarized briefly. Urban centers have not been able to absorb rural youth which is now "dammed up" on the farms. What will become of these millions? Will they be forced into subsistence farming? Will industry decentralize and thus facilitate part-time farming? Or will urban centers again absorb this excess farm population? These questions were not specifically answered, but in general the work of the Administration in its planning program was almost unanimously approved. The papers attempted to point out not only the problems which confront the planner, but various ways and means by which planning may be advanced.

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Assistant Professor of Economics and Public Utilities, Northwestern University.

Public Utilities

Sharfman, I. L. THE INTERSTATE COMMERCE COMMISSION, Part III, Vol. A. *New York: Commonwealth Fund, 1935. pp. xii, 684. $4.50.*

This is the third volume of the author's elaborate study of the powers, procedure, and policies of the Interstate Commerce Commission. The first 94 pages contain a rapid and well organized enumeration of the various responsibilities with which the Commission is charged. Of the balance of the work, about $\frac{2}{5}$ is devoted to valuation, another $\frac{2}{5}$ covers the subjects of consolidation and security control in about equal proportions, and the rest considers extensions and abandonments and provides for an excellent chapter of summary and conclusions. The whole discussion is supported by liberal quotations from Commission decisions and by citation of court and Commission cases, but reference to secondary literature is generally avoided.

Probably no other treatise upon an American administrative tribunal approaches the present work in thoroughness of scholarship, balance in judgment, and clearness in presentation. In these respects the volume resembles its predecessors in the series, with the difference that its broader scope gives the author greater opportunity

for criticism and comment. The criticism is at most points highly appreciative of the organization which the Interstate Commerce Commission has built up and of the policies which it has pursued. Indeed, those familiar with the Commission's work would hardly expect it to be otherwise. Where the author dissents, it is usually on a question of detail or on occasions when he feels that the Commission should have adopted a bolder plan of control. Thus he remarks at one time or another that the Commission has been too reluctant to override managerial judgment, too hesitant in forcing a revision of the capital structure of American railroads, and too slow to advocate a constructive policy of unification and control. He leans, that is to say, to the type of regulation which Commissioner Eastman has effectively endorsed, rather than to the more cautious views of commissioners such as Hall, Brainerd, and Woodlock. Illustrations of the author's attitude in particular matters may be found in the statements that the Commission, in valuing railroad property, accomplished the task of estimating production cost in a decidedly creditable fashion; that its reasoning in the O'Fallon case was supported by convincing considerations; that its scrutiny of railroad assets has largely served to keep railroad capitalization within reasonable bounds; and that in considering its power to require railroad construction in new territory in the State of Oregon the Commission, rather than the Court, took a position in line with sound public policy. The discussion throughout is of high quality, and worthy of the attention of all students of the problems and technique of government control.

There are few statements of fact to which the reviewer would take exception. One such remark, however, is to the effect that the railroad consolidation plan issued by the Commission in December, 1929, differed from the earlier plan of 1921 chiefly in that it recognized, and for the most part left undisturbed, the new alliances and group relationships which had been established in the interim. This is a very debatable generalization. The new plan did recognize new alliances, but it also proposed other considerable changes, some of them involving substantial matters of principle, of which the text takes no notice. In speaking of the consolidation provisions of the Act of 1920, moreover, the author makes no mention of the peculiar reasoning which led Senator Cummins to insist upon inclusion of these clauses. The Senator might have been surprised if he could have known the expectations to which his consolidation statute gave rise.

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Locklin, D. Philip. ECONOMICS OF TRANSPORTATION. *Chicago: Business Publications, Inc. 1935. pp. xii, 788. $4.00.*

This volume, designed by its author for use by college classes and for the information of those interested in progress toward the solution of a significant economic problem, merits careful examination. It represents, in part, another approach to a dynamic problem; in part, a more intensive development of certain fields—with prime emphasis upon regulation in its various aspects. Because of this fact, heavy reliance upon Commission reports and judicial holdings is evident throughout the volume; by his documentation the author shows a wide familiarity with these and other valuable sources.

The initial chapters of this volume emphasize the economic significance of improved transportation and outline briefly the development of transportation in the United States. This aspect of the subject is closed by a brief chapter which sketches our existing railway system; two small maps are appended, as well as an outline of the Commission's final consolidation plan. Then, following an interesting chapter upon the relation of freight rates and prices—the author's economic analysis being made more real by use of several diagrams, the influence of freight rates upon location of industries and of major population centers is indicated. This discussion of rates is concluded by two chapters on rate-making theory and practice; in the former, the author states well the conflicting principles and in the latter manages to include a wide variety of pertinent information.

Following four chapters in which he sketches the development of regulation chronologically, the author treats of the agencies of control; the relationship of commission to legislature and to court is indicated and certain major problems of commission regulation are outlined. Though

briefly done, the author properly stresses the vital need that commissions function as impartial bodies, if commission regulation is to succeed. Then appear, in turn, chapters upon railway competition, the rate level, valuation, and fair return. While the chapters on valuation present little that is new, which would be difficult in this field, the economic analysis and the statement of judicial doctrine are both presented clearly. Because of its relation to this material, a discussion of the strong-and-weak line problem follows at this point, the various proposed solutions being stated and weighed in turn.

The next 125 pages are given to certain additional rate problems, which the author develops carefully and clearly: the reasonableness of rates on particular commodities and between particular points; discrimination—personal, commodity, and place—with one full chapter devoted to the perennially troublesome long-and-short haul problem. This chapter is clarified by numerous diagrams and presents present-day aspects well. Following this material appear four chapters dealing with railway accounts, finance, service—also the regulation of each, and common carrier liability.

Finally, following a somewhat formal, yet fair and comprehensive, analysis of government ownership of railways, the author devotes five chapters to a specific consideration of the newer agencies of inland transport—highway, water, and air. Here not only appear a factual presentation but also a discussion of certain regulatory problems: the relationship of rates charged by competing agencies, the need of public intervention, and the nature of needed laws.

Although this volume is definitely meritorious, the reviewer feels constrained to offer certain suggestions and minor criticisms, even while recognizing these may proceed in considerable degree from a difference in point of view as to what should be offered in a "first" book in transportation. Greater stress might advantageously be given to the historical development of the "transportation problem"; lesser stress might be given in an elementary volume to railway rate-making; the treatment of modern transport would be improved by an inclusion of pipe lines, as well as a more adequate chapter on air transport. The volume would be stronger, too, if in a final chapter or chapters the coordination of agencies were treated and an evaluation of some of the more important "transportation programs" were offered. It is possible, too, that in a revision of the volume the author may wish to organize his material somewhat differently, grouping related matter more effectively.

Yet, withal, the elements of strength of this volume definitely outweigh any defects. It is clearly written and each chapter is developed logically. Its documentation gives tangible evidence of painstaking effort. It is a scholarly volume and in its development of the problem of railway rates represents a contribution to the field. In his treatment of controversial questions the author shows balance; his clarity in economic analysis is commendable and commands agreement with his conclusions generally. *Economics of Transportation* is a valuable addition to transportation literature; its author gives the reader a comprehensive, scholarly treatment of a field that becomes rapidly more complex and difficult.

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Miscellaneous

Magill, Roswell, Editor. Lectures on Taxation. *Chicago: Commerce Clearing House, Inc., 1932. pp. v, 254. $2.50.*

This compilation of lectures delivered in a symposium on the Law and Practice of Taxation, conducted at Columbia University during the summer session of 1932 by eminent lawyers, accountants, and economists, deals with seven current major problems related to federal taxation. Each lecture stands as an independent unit, and the compilation has been made chiefly for the convenience of students of taxation.

Such successful attempts to bring together the views of lawyers, accountants, and economists trained in the field of public finance and to present solutions of the major current problems in taxation are laying the groundwork for future constructive legislation. Specialists in the field of taxation owe a vote of thanks to the editor and publisher for making available the excellent lectures in this symposium.

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